SECTION FOUR
CONCLUSION

STATE OF UTAH
HAZARD MITIGATION PLAN

March 2011

Local Capability Assessment

Requirement §201.4(c)(3)(ii): [The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.

Utah Division of Homeland Security staff continues to actively work with local government to identify measures most effective for hazard mitigation planning. The State of Utah has a history of strong property owners' rights. The value residents of Utah place on property rights seem to be waning as Utah's population becomes more urban. This coupled with recent events such as the 2005 flooding in St. George, the Spring Flooding in 2010, Milford Flat Fire, Neola North Fire, Salt Creek Fire Mill Flat Fire & Machine Gun Fire and Santaquin and Corner Canyon debris flows as well as large wildfires throughout the West and recently California have opened the door for hazard mitigation. The SHMPC continues to work with the seven Associations of Government to identify measures most effective in reducing the risk to natural hazards.

This process yielded results at opposite ends of the scale. Urban areas within the state have highly sophisticated planning departments enforcing land use planning through zoning ordinances and site-specific building ordinances. In the case of communities along the Wasatch Front regional planning is getting stronger. This planning primarily addresses transportation, land use, flood control, and water resources. A good example of this is Envision Utah a multi-jurisdictional planning initiative to encourage smart growth along the Wasatch Front. Almost all of the urban cities and counties along the Wasatch Front have planners, zoning officials, building inspectors, and full time emergency managers. This results in an effective ability to mitigate natural hazards.

At the other end of the scale are the rural areas of Utah. These areas are with the exception of Washington and Summit Counties those areas of the state having a more rural makeup, these areas do not have a tax base large enough to sustain the staff required to provide planning, zoning, emergency managers and building inspections functions within their jurisdiction. While this limits their capability to establish the policies and programs typically used to judge a jurisdictions capability to perform mitigation, it does not mean they lack the capability. Project Impact was very successful in both the Cities of Moab and Logan. A good example of planning and land use in rural Utah is the 21st Century Program:

21st Century Program:

The 21st Century Communities program is intended to assist rural leaders who accept this challenge prepare rural Utah for unprecedented population and visitor growth, create new jobs and reduce unemployment, diversify rural economies and protect quality of life.

Many of Utah's fastest growing communities are located outside the Wasatch Front, in rural Utah. Small towns do not have the staff, budget or the expertise to address their community planning concerns. Planning assistance is required in developing general plans, affordable housing plans, subdivision ordinances, economic development strategies, and in updating zoning ordinances.

The challenge of the 21st Century Communities program is to:

- Prepare rural Utah for unprecedented population and visitor growth
- Create new jobs and reduce unemployment
- Diversify rural economies
- Protect quality of life

To accomplish this task the 21st Century Program requires communities to:

- Complete a community assessment; topics addressed in the assessment are economic development, community planning, tourism and heritage development, transportation planning, governance, public safety, education, and health care.
- Participate in training
- Completing a community general plan
- Completing a community work plan

This challenge includes a call; for rural leaders to look to the future and begin now to develop a game plan for community prosperity and success. It is a call to evaluate the forces of change that are shaping the future, to assess community needs and opportunities, to improve leadership skills and knowledge, and to develop strategies to resolve problems and achieve community goals.

The purpose of the 21st Century program and Circuit Rider Planner Grants has been to provide circuit rider planners and other planning assistance to rural communities.

The following rural communities are participating in the 21st Century program:

Summit County
Toole County
Carbon County
Salt Lake City
West Valley City
Sandy City
Provo City
West Jordan City
Riverton City
Draper City
Payson City
West Pointe City
Roy City
Riverton City
Orem City
Murray City
American Fork City
Midvale City
Snyderville Basin Water
Reclamation District
Utah Transit Authority
Ballard

Bear River
Beaver
Coalville
Corinne
Fillmore
Honeyville
LaVerkin
Mt. Pleasant
Newton
Nibley
Payson
Piute County
Salina
Price
Smithfield
Springdale
Santaquin
Brigham City
North Logan
Perry
Tremonton
Lindon

Panguitch
Myton
Wasatch County
Uintah County
Naples
Manti
Logan

Building Codes

The State of Utah adopted the International Building Code IBC. By law, each jurisdiction in Utah must also adopt the IBC. This process has occurred in the majority of both urban and rural jurisdictions Utah. These higher design codes especially with regards to seismic design will greatly reduce damage to new buildings.

Building Code Effectiveness Grading Reports

The Insurance Services Office, Inc performs Building Code Effectiveness Grading Reports (BCEGS). The program implemented in 1995 assesses the building codes in effect in a particular community and how well the community enforces its building codes. BCEGS program assigns each municipality a BCEGS grade of 1 to 10 with one showing an exemplary commitment to building code enforcement. Insurance Services Inc. (ISO) developed advisory rating credits that apply to ranges of BCEGS classifications 1-3, 4-7, 8-9, 10. ISO gives insurers BCEGS classifications, BCEGS advisory Credits, and related underwriting information. The concept is that communities with effective, well-enforced building codes should sustain less damage in the event of a natural disaster, and insurance rates can reflect that. The prospect of lessening natural hazard related damage and ultimately lowering insurance costs provides an incentive for communities to enforce their building codes rigorously. FEMA also uses these scores in their competitive grant programs giving a higher ranking to those projects in jurisdictions with lower scores. For these reasons the BCEGS scores were used in the development of this plan to assess local jurisdictions building codes. Table C-1, contains the residential and commercial BCEGS scores where reported in the State of Utah.

Table C-1 Building Code Effectiveness Grading Reports

Community	BCEGS Classification	Date	Community	BCEGS Classification	Date
ALPINE	RES 03 COM 03	2001	MURRAY	RES 02 COM 02	2000
AMERICAN FORK	RES 03 COM 03	1999	N LOGAN	RES 03 COM 03	1999
BEAVER	RES 04 COM 04	2000	N OGDEN	RES 04 COM 04	1999
BEAVER CO	RES 03 COM 03	2002	N SALT LAKE	RES 04 COM 04	1997
BIG WATER	RES 05 COM 05	1998	NEPHI	RES 06 COM 06	2001
BLANDING	RES 04 COM 04	2002	OGDEN	RES 03 COM 03	1999
BLUFFDALE	RES 03 COM 03	2002	OREM	RES 04 COM 04	1999
BOUNTIFUL	RES 03 COM 03	2001	PARK CITY	RES 03 COM 03	2001
BOX ELDER CO	RES 04 COM 04	2001	PAYSON	RES 05 COM 05	2002
BRIGHAM CITY	RES 03 COM 03	2001	PLAIN CITY	RES 05 COM 05	2003
CACHE CO	RES 03 COM 03	2001	PLEASANT GROVE	RES 03 COM 03	2000
CARBON CO	RES 04 COM 04	2001	PRICE	RES 03 COM 03	2001
CEDAR CITY	RES 04 COM 99	2000	PROVO	RES 04 COM 04	1999
CENTERVILLE	RES 03 COM 03	1999	RIVERDALE	RES 05 COM 05	1999
CLEARFIELD	RES 05 COM 05	1999	RIVERTON	RES 05 COM 05	2000
CLINTON	RES 05 COM 05	2000	ROOSEVELT	RES 99 COM 05	2001
DAVIS CO	RES 05 COM 05	2001	ROY	RES 04 COM 04	2000
DRAPER	RES 04 COM 04	2000	S JORDAN	RES 05 COM 05	1999
DUCHESNE	RES 99 COM 99	1999	S OGDEN	RES 03 COM 03	2000
DUCHESNE CO	RES 99 COM 03	2003	S SALT LAKE	RES 03 COM 03	2002
ELK RIDGE	RES 99 COM 99	1999	S WEBER	RES 04 COM 04	1998
EMERY CO	RES 04 COM 04	2002	SALEM	RES 03 COM 03	2003
ENOCH CITY	RES 05 COM 05	2002	SALT LAKE CITY	RES 03 COM 03	2002
ENTERPRISE	RES 03 COM 03	2002	SALT LAKE CO (CONT 1)	RES 04 COM 04	1998
EUREKA	RES 04 COM 04	2000	SAN JUAN CO	RES 04 COM 04	2002
FARMINGTON	RES 05 COM 05	2000	SANDY	RES 03 COM 03	1999

FARR WEST CITY	RES 04 COM 04	2002	SANPETE CO	RES 04 COM 04	2001
FERRON	RES 05 COM 05	1998	SANTAQUIN	RES 04 COM 04	2002
FILLMORE	RES 04 COM 04	2000	SEVIER CO	RES 03 COM 03	2001
FRUIT HEIGHTS	RES 05 COM 05	2001	SMITHFIELD	RES 04 COM 04	2000
GARDEN CITY	RES 99 COM 07	1998	SPANISH FORK	RES 03 COM 03	1999
GARFIELD CO	RES 06 COM 06	1997	SPRINGVILLE	RES 04 COM 04	1999
GENOLA	RES 05 COM 05	2002	ST GEORGE	RES 04 COM 04	2000
GOSHEN	RES 99 COM 99	1999	STOCKTON	RES 99 COM 99	1999
GRAND CO	RES 03 COM 03	2001	SUMMIT CO	RES 04 COM 04	2000
GRANTSVILLE	RES 99 COM 99	1999	SYRACUSE	RES 04 COM 04	1999
GREEN RIVER	RES 03 COM 03	2002	TAYLORSVILLE	RES 04 COM 04	1998
HEBER CITY	RES 04 COM 04	1999	TOOELE	RES 03 COM 03	2003
HIGHLAND	RES 05 COM 05	1999	TOOELE CO	RES 02 COM 02	2003
HILDALE	RES 99 COM 99	1999	TREMONTON	RES 05 COM 05	2000
HUNTINGTON	RES 03 COM 03	2001	UINTAH	RES 03 COM 03	2003
HUNTSVILLE	RES 03 COM 03	2003	UINTAH CO	RES 04 COM 04	2003
HURRICANE	RES 04 COM 04	2000	UTAH CO	RES 03 COM 03	2000
HYDE PARK	RES 03 COM 03	2001	VERNAL	RES 02 COM 02	2001
IRON CO	RES 04 COM 04	2001	VINEYARD	RES 03 COM 03	2003
IVINS	RES 04 COM 04	2002	W BOUNTIFUL	RES 99 COM 99	1999
KANAB	RES 03 COM 03	2002	W JORDAN	RES 03 COM 03	2000
KANARRAVILLE	RES 99 COM 99	1998	W POINT	RES 06 COM 06	1998
KANE CO	RES 99 COM 05	2001	W VALLEY CITY	RES 04 COM 04	1999
KAYSVILLE	RES 05 COM 05	1999	WASATCH CO	RES 03 COM 03	2000
LA VERKIN	RES 03 COM 03	2002	WASHINGTON	RES 05 COM 05	2002
LAYTON	RES 04 COM 04	1999	WASHINGTON CO	RES 03 COM 03	2000
LEHI	RES 04 COM 04	1999	WASHINGTON TERRACE	RES 03 COM 03	1999
LINDON	RES 04 COM 04	2002	WEBER CO	RES 05 COM 05	2000
LOGAN	RES 03 COM 03	1999	WENDOVER	RES 03 COM 03	1997
MANILA	RES 04 COM 04	2003	WILLARD	RES 05 COM 05	1998
MAPLETON	RES 04 COM 04	2000	WOODLAND HILLS	RES 99 COM 99	1998
MARRIOTT-SLATERVILLE	RES 03 COM 03	2001	WOODS CROSS	RES 99 COM 99	2002
MIDVALE	RES 04 COM 04	1999	Source: ISO. 99 is used for jurisdictions which are either unclassified or do not meet the minimum criteria of the BCEGS program. This would include departments which do not do plan review, inspections, have legally adopted codes or have declined to participate in the ISO program.		
MILLARD CO	RES 04 COM 04	1997			
MOAB	RES 04 COM 04	1997			
MORGAN	RES 03 COM 03	2002			
MORGAN CO	RES 04 COM 04	2001			

Zoning & Land Use

The State of Utah maintains a philosophy of local responsibility for zoning and land use planning. State law requires that each jurisdiction have a comprehensive land use plan, though there is no statute on how often they need to be update. Comprehensive plans are required to have certain elements in them but addressing hazards is not one of those. State agencies provide an integrated network of support, services, and resources related to zoning activities many of these services are explained in depth in the State Capabilities Section. The best generalization with regards to zoning and land use planning in Utah is as the population increases and areas become more urbanized emphisis on land use planning and zoning increases.

The Utah Municipal Code 10-9 Part 8, empowers cities with legislative authority to enact subdivision ordinances. Subdivision regulations are important in hazard prone areas as they can specify local subdivision requirements.

The Utah Code Title 10, Chapter 9a, Municipal Land Use Development and Management Act, is Utah's local land use enabling authority for local government that "provides for the health, safety, and welfare" in areas subject to natural hazards.
Comprehensive planning and zoning are very important in hazard prone areas as they are tools that can establish suitable land uses, especially for hazards that geographic extent (i.e., floodplains and geologic hazards). The City of Moab has incorporated their mitigation strategies within their Master Plan. The Utah DHLS has been in the process of generating discussions with other communities to fully incorporate mitigation plans into their Master Plans. This would give the local mitigation plans practicability and function within the community. The current economic environment has made updating Master Plans difficult for local communities.

County Emergency Operations Plan (EOP)

Emergency operation planning has been taking place in Utah counties for over twenty years. These plans identify both natural and man-made hazards, which may impact the residents of the county, then details the response and recovery procedures that local officials should follow if a disaster strikes. While each county has an EOP, many of these EOP are not consistently exercised and updated.

Critical Lands Planning Toolkit

Increasingly the state's mountains, lakes, wetlands, and deserts constrain potential sites for new development. This oftentimes leads to development on steep slopes, floodplains, wetlands, riparian zones, farmland, and areas of prime wildlife habitat. Despite this demand, it is critical that some lands are left to perform their natural function. As a result, proactive measures are needed to conserve Utah's critical lands while accommodating future growth.

Perhaps the most important measure that can be taken to protect Utah's future is to promote quality growth. Quality growth requires a balance between the protection of critical lands and the requisite development of residential, commercial, and industrial land to accommodate an ever-expanding economy and population. Many communities, however, lack the funds, resources, or staff needed to identify these critical lands, thus leading to an unbalanced system that favors unchecked and costly development.

This toolkit is intended to aid communities in defining, identifying, inventorying, mapping, and prioritizing their critical lands in an effort to achieve a balance between conservation and development. It provides objective data that can be used to cooperate with private landowners to protect property rights and achieve mutual goals in land use planning. The toolkit is easy to use.

This toolkit is comprised of a "Critical Lands Encyclopedia" that explains what critical lands are and why it is important that they be considered in future land use decisions. It also includes a section on implementation procedures and incentives that can be used to accomplish critical lands planning. Perhaps the most exciting part of the toolkit is the interactive on-line critical lands mapping tool.

The mapping tool, which is a Geographic Information System (GIS) based program, is designed to assist communities in creating maps that not only identify their critical lands, but prioritizes them as well. This toolkit is the first step in creating a critical lands plan for your community

The State of Utah Planning and Education Resource (SUPER) Tool

The State of Utah Planning and Education Resource (SUPER) tool is an effort at collaboration and coordination of the many planning efforts that are taking place throughout the State of Utah. Using a collaborative approach, SUPER is a portal for planning tools and resources, regardless of agency or organization. The idea is to put the many planning resources from throughout the state into the hands of working planners and policy makers at the local government level. SUPER links not only to tools and resources, the home page also links to the web pages of the various planning entities in the State.

The State and Local Planning Section serves as staff for the State Planning Coordinator in facilitating coordination among all levels of government. The Section also provides technical assistance to local governments as requested for developing and implementing land use plans.

Federal Mitigation Funding Sources & Capabilities

Requirement §201.4(c)(3)(iv): [The State mitigation strategy shall include an] identification of current and potential sources of Federal, State, local, or private funding to implement mitigation activities.

The following grant sources may provide assistance to local governments or other eligible applicants for mitigation projects or planning.

- **Hazard Mitigation Grant Program (HMGP)**
  - Lead Agency: Utah DHLS
  - Funding: Varies by disaster
  - Funding Formula: 75% federal: 25% non-federal
  - Funding Source: FEMA
  - Applicants: Public Sector (same as for Public Assistance)
  - Project Type: Natural Hazard Mitigation
  - Reference: www.fema.gov
- **Pre-Disaster Mitigation Competitive (PDM-C) Grant Program**
  - Lead Agency: Utah DHLS
  - Funding: Annual
  - Funding Formula: 75% federal: 25% non-federal
  - Funding Source: FEMA
  - Applicants: Public Sector (same as for Public Assistance)
  - Project Type: Natural Hazard Mitigation, Planning
  - Reference: www.fema.gov
- **Flood Mitigation Assistance (FMA) Program**
  - Lead Agency: Utah DHLS
  - Funding: Annual
  - Funding Formula: 75% federal: 25% non-federal
  - Funding Source: FEMA
  - Applicants: Public Sector (same as for Public Assistance)
  - Project Type: Flood Mitigation, Planning
  - Reference: www.fema.gov

- **Small Business Administration (SBA) Disaster Recovery Loans**
  - Lead Agency: SBA
  - Funding: Varies by disaster
  - Funding Formula: Low interest loans (4% or less)
  - Funding Source: SBA
  - Applicants: Small Businesses
  - Project Type: General Disaster Recovery, Hazard Mitigation
  - Reference: http://www.sba.gov/
- **State Fire Assistance – Utah Fire and Rescue Academy (UFRA)**
  - Lead Agency: FFSL
  - Funding: Annual
  - Funding Formula: 90% federal : 10% non-federal
  - Funding Source: Combined Federal Agencies
  - Applicants: Fire Departments
  - Project Type: Organization, training, prevention, equipment
  - Reference: http://www.ffsl.utah.gov/grants/grants.php#firegrants
  - Contact shanefreeman@utah.gov
- **Rural Fire Assistance (RFA)**
  - Lead Agency: FFSL
  - Funding: Annual
  - Funding Formula: 90% federal : 10% non-federal
  - Funding Source: Department of the Interior
  - Applicants: Fire Departments
  - Project Type: Wildland fire education, training, equipment
  - Reference: http://www.ffsl.utah.gov/grants/grants.php#firegrants
  - Contact shanefreeman@utah.gov
- **Volunteer Fire Assistance (VFA)**
  - Lead Agency: FFSL
  - Funding: Annual
  - Funding Formula: 50% federal : 50% non-federal
  - Funding Source: USFS
  - Applicants: Volunteer Fire Departments
  - Project Type: Organization, training, prevention, equipment
  - Reference: http://www.ffsl.utah.gov/grants/grants.php#firegrants
  - Contact shanefreeman@utah.gov
- **Community Forestry Partnership Grants**
  - Lead Agency: FFSL
  - Funding: Annual
  - Funding Formula: 50% federal : 50% non-federal
  - Funding Source: USFS
  - Applicants: Public sector
  - Project Type: Develop and support urban and community forestry programs
  - Contact meridithperkins@utah.gov
  -
- **Arbor Day Grants**

- Lead Agency: FFSL
- Funding: Annual
- Funding Formula: 50% federal : 50% non-federal
- Funding Source: USFS
- Applicants: Public sector
- Project Type: Assistance for communities to meet one of four criteria of Tree City USA
- Reference: http://www.ffsl.utah.gov/grants/grants.php#urbangrants

Project Impact

Under the Clinton Administration, FEMA initiated a program designed to unite local governments with businesses in their jurisdiction to create disaster resistant communities. The program was Project Impact. Utah had five communities participate in this program Centerville 1997, Moab 1998, Logan 1998, Salt Lake 1999, and Provo 2000.

Selected communities received funding directly from FEMA. The states role was to recommend communities and provide support and technical expertise. What follows is abbreviated list of accomplishments made by selected jurisdictions.

Centerville

- SNOTEL Site installation for monitoring snowpack and flood potential
- USGS Stream Gage for gathering baseline data on Deuel Creek
- Weather station at Centerville Elementary School
- Development of a flood prediction model using data from stream gage, weather station and SNOTEL site
- Debris basin on Barnard Creek (Resulted in a LOMR on the FIRM, 13 JUN 2002)
- New culvert under I-15 (Currently working on LOMR to FIRM as a result of this project)
- Flood Mitigation plan development
- Review of development codes
- Participation in the NFIP CRS program
- Bonneville shoreline trail development
- The "Garden Walk" (education program for the wildland fire interface area & for provident living)
- Development / Enhancement of the Neighborhood Network
- Creation of a Drainage Utility

Moab

- The City completed the Tusher Canyon Dam Discharge Project. In the past, canyon floodwaters were released below the dam and distributed throughout the community. The City installed culverts to pipe the drainage from the Tusher Dam to Mill Creek. The new culverts and drop drains also catch floodwaters from Oak Street, Walker Street and Sand Flats road and direct the floodwaters into Mill Creek.

- The City installed the 500 West Culvert/Underpass. A 25' X 9' culvert was placed next to the 500 West/Mill Creek Bridge to allow more Mill Creek and Pack Creek floodwater through the area and to reduce the floodplain.
- The City with the help of the County and Weather Service installed a NOAA weather radio transmitter. For over a year the area (Grand County, San Juan County and Emery County) is served by the transmitter. The City gave away 50 weather radios to public organizations that need them.
- The City thinned trees along Mill Creek to reduce hazards. The City also removed trees and made a trail from 100 West to 500 West.

Logan

- Snotel site
- River gage on the blacksmith fork river
- River Channel rework
- Rail road tressel change
- Emergency generator for service center
- Print Emergency Safety Tips booklet

Salt Lake City

- Installed SNOTEL Site to monitor low level snowpack in City Creek Canyon
- Completed non-structural earthquake mitigation manual for seismic design in Utah Schools
- Earthquake water heater strap tie down purchase and install.
- Living With Fire Program Wildfire Education
- Seismic upgrade to culinary water system
- City Creek Stream Gauge
- Landslide Vulnerability analysis
- Salt Lake City CERT Program

Provo

- Snotel site in drainage to the east of the city.
- Updated GIS hazard maps for seismic, wildfire, and flooding.
- Design work on an outfall project to control seasonal frontal canyon flooding.
- Non-structural mitigation for critical areas at Provo City and BYU.
- Re-enforced windows at Provo High, a primary Red Cross shelter location.
- CERT program materials and supplies.
- Educational community classroom.

Table C-2 Federal Mitigation Programs, Activities and Initiatives

Program / Activity	Type of Assistance	Agency & Contact
Basic & Applied Research/ Development		
Center for Integration of Natural Disaster Information	**Technical Assistance**: Develops and evaluates technology for information integration and dissemination	Department of Interior (**DOI**) –US Geological Survey (**USGS**) The Center for Integration of Natural Hazards Research: (703) 648-6059 http://egsc.usgs.gov/isb/pubs/factsheets/fs00301.html#information
Hazard Reduction Program	**Funding** for research and related educational activities on hazards.	National Science Foundation (**NSF**), Directorate for Engineering, Division of Civil and Mechanical Systems, Hazard Reduction Program: (703) 306-1360
Decision, Risk, and Management Science Program	**Funding** for research and related educational activities on risk, perception, communication, and management (primarily technological hazards)	**NSF** – Directorate for Social, Behavioral and Economic Science, Division of Social Behavioral and Economic Research, Decision, Risk, and Management Science Program (DRMS): (703) 306-1757 www.nsf.gov/sbe/drms/start.htm
Societal Dimensions of Engineering, Science, and Technology Program	**Funding** for research and related educational activities on topics such as ethics, values, and the assessment, communication, management and perception of risk	**NSF** – Directorate for Social, Behavioral and Economic Science, Division of Social, Behavioral and Economic Research, Societal Dimensions of Engineering, Science and Technology Program: (703) 306-1743
National Earthquake Hazard Reduction Program (NEHRP) in Earth Sciences	**Research** into basic and applied earth and building sciences.	**NSF** – Directorate for Geosciences, Division of Earth Sciences: (703) 306-1550
Technical and Planning Assistance		
Planning Assistance to States	**Technical and planning assistance** for the preparation of comprehensive plans for the development, utilization, and conservation of water and related land resources.	Department of Defense (**DOD**) US Army Corps of Engineers (**USACE**) Contact the Floodplain Management Staff in the Appropriate USACE Regional Office North Atlantic: (570) 835-5281 South Atlantic: (919) 846-9332 Great Lakes and Ohio River: (330) 547-3801 Mississippi Valley: (217) 774-3951 Northwestern (Kansas & Omaha): (402) 667-2542 Northwestern (Portland, Seattle, & Walla Walla): (208) 476-1279 Southwestern: (479) 968-5008 South Pacific: (505) 685-4371
Disaster Mitigation Planning and Technical Assistance	**Technical and planning assistance** grants for capacity building and mitigation project activities focusing on creating disaster resistant jobs and workplaces.	Department of Commerce (**DOC**), Economic Development Administration (**EDA**): (202) 482-4085 **EDA**'s Disaster Recovery Coordinator: www.eda.gov

Watershed Surveys and Planning	**Surveys and planning studies** for appraising water and related resources, and formulating alternative plans for conservation use and development. Grants and advisory/counseling services to assist w/ planning and implementation improvement.	US Department of Agriculture (**USDA**) – National Resources Conservation Service (**NRCS**) Water Management: (202) 720-0637 Program Manager : (406) 587-6919 www.nrcs.usda.gov
National Flood Insurance Program	**Formula grants to States** to assist communities to comply with NFIP floodplain management requirements (Community Assistance Program).	**FEMA**
Emergency Management / Mitigation Training	**Training** in disaster mitigation, preparedness, planning.	**FEMA**
National Dam Safety Program	**Technical assistance,** training, and grants to help improve State dam safety programs.	**FEMA**
National Earthquake Hazards Reduction Program	**Training, planning and technical assistance** under grants to States or local jurisdictions.	**FEMA; DOI-USGS** **USGS** Earthquake Program Coordinator: (703) 648-6785
Volcano Hazards Program	**Technical assistance**: Volcano hazard warnings and operation of four volcano observatories to monitor and assess volcano hazard risk.	**DOI-USGS** Volcanic Hazards Program Coordinator: (703) 648-6711 (650) 329-5247
Floodplain Management Services	**Technical and planning assistance** at the local, regional, or national level needed to support effective floodplain management.	**DOD-USACE** North Atlantic: (570) 835-5281 South Atlantic: (919) 846-9332 Great Lakes and Ohio River: (330) 547-3801 Mississippi Valley: (217) 774-3951 Northwestern (Kansas & Omaha): (402) 667-2542 Northwestern (Portland, Seattle, & Walla Walla): (208) 476-1279 Southwestern: (479) 968-5008 South Pacific: (505) 685-4371
Watershed Protection and Flood Prevention Program	**Technical and financial assistance** for installing works of improvement to protect, develop, and utilize land or water resources in small watersheds under 250,000 acres.	**USDA-NRCS** Program Manager: (406) 587-6919 (202) 720-0637 www.nrcs.usda.gov
Environmental Quality Incentives Program (EQIP)	**Technical**, educational, and limited **financial assistance** to encourage environmental enhancement.	**USDA-NRCS** NRCS County Offices

		Or NRCS EQUIP Program Manager: (202) 690-2621 www.nrcs.usda.gov
National Earthquake Hazard Reduction Program	**Technical and planning assistance** for activities associated with earthquake hazards mitigation.	**FEMA, DOI-USGS** Earthquake Program Coordinator: (703) 648-6714
Hazard ID & Mapping		
National Flood Insurance Program: Flood Mapping;	**Flood insurance rate maps** and flood plain management maps for all NFIP communities;	**FEMA**
National Flood Insurance Program: Technical Mapping Advisory Council	**Technical guidance and advice** to coordinate FEMA's map modernization efforts for the National Flood Insurance Program.	**DOI-USGS** **USGS** – National Mapping Division: (573) 308-3802
National Digital Ortho-photo Program	Develops **topographic quadrangles** for use in mapping of flood and other hazards.	**DOI-USGS** **USGS** – National Mapping Division: (573) 308-3802
Stream gauging and Flood Monitoring Network	Operation of a **network of over 7,000 stream gauging stations** that provide data on the flood characteristics of rivers.	**DOE-USGS** Chief, Office of Surface Water, USGS**:** (703) 648-5301
Mapping Standards Support	**Expertise in mapping and digital data** standards to support the National Flood Insurance Program.	**DOI-USGS** USGS – National Mapping Division: (573) 308-3802
Soil Survey	**Maintains soil surveys** of counties or other areas to assist with farming, conservation, mitigation or related purposes.	**USDA-NRCS** NRCS – Deputy Chief for Soil Science and Resource Assessment: (202) 720-3783
National Earthquake Hazards Reduction Program	**Seismic mapping for U.S.**	**DOI-USGS** USGS Earthquake Program Coordinator: (703) 648-6696
Project Support		
Aquatic Ecosystem Restoration	**Direct support** for carrying out aquatic ecosystem restoration projects that will improve the quality of the environment.	**DOD-USACE** Chief of Planning @ appropriate USACE Regional Office North Atlantic: (570) 835-5281 South Atlantic: (919) 846-9332

		Great Lakes and Ohio River: (330) 547-3801 Mississippi Valley: (217) 774-3951 Northwestern (Kansas & Omaha): (402) 667-2542 Northwestern (Portland, Seattle, & Walla Walla): (208) 476-1279 Southwestern: (479) 968-5008 South Pacific: (505) 685-4371
Beneficial Uses of Dredged Materials	**Direct assistance** for projects that protect, restores, and create aquatic and ecologically related habitats, including wetlands, in connection with dredging an authorized Federal navigation project.	**DOD-USACE** Same as above
Wetlands Protection – Development Grants	**Grants** to support the development and enhancement of State and tribal wetlands protection programs.	US Environmental Protection Agency (**EPA**) EPA Wetlands Hotline: (800) 832-7828 Or EPA Headquarters, Office of Water Chief, Wetlands Strategies and State Programs: (202) 260-6045
Clean Water Act Section 319 Grants	**Grants to States** to implement non-point source programs, including support for non-structural watershed resource restoration activities.	**EPA** Office of Water Chief, Non-Point Source Control Branch: (202) 260-7088, 7100
Coastal Zone Management Program	**Grants** for planning and implementation of non-structural coastal flood and hurricane hazard mitigation projects and coastal wetlands restoration.	Department of Commerce (**DOC**) National Oceanic and Atmospheric Administration (**NOAA**) National Ocean Service Office of Ocean and Coastal Resource Management Chief, Coastal Programs Division: (301) 713-3102
Community Development Block Grant (CDBG) State Administered Program	**Grants to States** to develop viable communities (e.g., housing, a suitable living environment, expanded economic opportunities) in non-entitled areas, for low- and moderate-income persons.	US Department of Housing and Urban Development **(HUD)** State CDBG Program Manager Or State and Small Cities Division, Office of Block Grant Assistance, HUD Headquarters: (202) 708-3587
Community Development Block Grant Entitlement Communities Program	**Grants** to entitled cities and urban counties to develop viable communities (e.g., decent housing, a suitable living environment, expanded economic opportunities), principally for low- and moderate-income persons.	**HUD** City and county applicants should call the Community Planning and Development staff of their appropriate HUD field office. As an alternative, they may call the Entitlement Communities Division, Office of Block Grant Assistance, HUD Headquarters: (202) 708-1577, 3587

Emergency Watershed Protection Program	Provides **technical and financial assistance** for relief from imminent hazards in small watersheds, and to reduce vulnerability of life and property in small watershed areas damaged by severe natural hazard events.	**USDA – NRCS** National Office – (202) 690-0848 Watersheds and Wetlands Division: (202) 720-3042
Rural Development Assistance -- Utilities	Direct and guaranteed rural economic **loans and business enterprise grants** to address utility issues and development needs.	**USDA**-Rural Utilities Service (RUS) Program Support: (202) 720-1382 Northern Regional Division: (202) 720-1402 Electric Staff Division: (202) 720-1900 Power Supply Division: (202) 720-6436
Rural Development Assistance – Housing	**Grants, loans, and technical assistance** in addressing rehabilitation, health and safety needs in primarily low-income rural areas. Declaration of major disaster necessary.	**USDA**-Rural Housing Service (RHS) Community Programs: (202) 720-1502 Single Family Housing: (202) 720-3773 Multi Family Housing: (202) 720-5177
Project Impact: Building Disaster Resistant Communities	**Funding and technical assistance** to communities and States to implement a sustained pre-disaster mitigation program.	**FEMA**
Flood Mitigation Assistance	**Grants to States** and communities for pre-disaster mitigation to help reduce or eliminate the long-term risk of flood damage to structures insurable under the National Flood Insurance Program.	**FEMA**
Hazard Mitigation Grant Program	**Grants to States and communities** for implementing long-term hazard mitigation measures following a major disaster declaration.	**FEMA**
Public Assistance Program (Infrastructure)	**Grants to States and communities** to repair damaged infrastructure and public facilities, and help restore government or government-related services. Mitigation funding is available for work related to damaged components of the eligible building or structure.	**FEMA**
National Flood Insurance Program	Makes available **flood insurance** to residents of communities that adopt and enforce minimum floodplain management requirements.	**FEMA**
HOME Investments Partnerships Program	**Grants to States, local government** and consortia for permanent and transitional housing (including support for property acquisition and rehabilitation) for low-income persons.	**HUD** Community Planning and Development, Grant Programs, Office of Affordable Housing, HOME Investment Partnership Programs: (202) 708-2684 (202) 708 0614 extension 4594 1-800-998-9999

Disaster Recovery Initiative	**Grants** to fund gaps in available recovery assistance after disasters (including mitigation).	**HUD** Community Planning and Development Divisions in their respective HUD field offices or HUD Community Planning and Development: (202) 708-2605
Non-Structural Alternatives to Structural Rehabilitation of Damaged Flood Control Works	**Direct planning and construction grants** for non-structural alternatives to the structural rehabilitation of flood control works damaged in floods or coastal storms. $9 million FY99	**DOD-USACE** Emergency Management contact in respective **USACE** field office: North Atlantic: (570) 835-5281 South Atlantic: (919) 846-9332 Great Lakes and Ohio River: (330) 547-3801 Mississippi Valley: (217) 774-3951 Northwestern (Kansas & Omaha): (402) 667-2542 Northwestern (Portland, Seattle, & Walla Walla): (208) 476-1279 Southwestern: (479) 968-5008 South Pacific: (505) 685-4371
Partners for Fish and Wildlife	**Financial and technical assistance** to private landowners interested in pursuing restoration projects affecting wetlands and riparian habitats.	Department of Interior (**DOI**) – Fish and Wildlife Service (**FWS**) National Coordinator, Ecological Services: (703) 358-2201 A list of State and Regional contacts is available from the National Coordinator upon request.
Project Modifications for Improvement of the Environment	Provides for **ecosystem restoration** by modifying structures and/or operations or water resources projects constructed by the USACE, or restoring areas where a USACE project contributed to the degradation of an area.	**DOD-USACE** Chief of Planning @ appropriate USACE Regional Office North Atlantic: (570) 835-5281 South Atlantic: (919) 846-9332 Great Lakes and Ohio River: (330) 547-3801 Mississippi Valley: (217) 774-3951 Northwestern (Kansas & Omaha): (402) 667-2542 Northwestern (Portland, Seattle, & Walla Walla): (208) 476-1279 Southwestern: (479) 968-5008 South Pacific: (505) 685-4371
Post-Disaster Economic Recovery Grants and Assistance	**Grant funding** to assist with the long-term economic recovery of communities, industries, and firms adversely impacted by disasters.	Department of Commerce (**DOC**) – Economic Development Administration (**EDA**) EDA Headquarters Disaster Recovery Coordinator: (202) 482-4085

Public Housing Modernization Reserve for Disasters and Emergencies	**Funding** to public housing agencies for modernization needs resulting from natural disasters (including elevation, flood proofing, and retrofit).	**HUD** Director, Office of Capital Improvements: (202) 708-1640
Indian Housing Assistance (Housing Improvement Program)	**Project grants and technical assistance** to substantially eliminate sub-standard Indian housing.	Department of Interior (**DOI**)-Bureau of Indian Affairs (**BIA**) Division of Housing Assistance, Office of Tribal Services: (202) 208-5427
Land Protection	**Technical assistance** for run-off retardation and soil erosion prevention to reduce hazards to life and property.	**USDA-NRCS** Applicants should contact the National NRCS office: (202) 720-4527
North American Wetland Conservation Fund	**Cost-share grants** to stimulate public/private partnerships for the protection, restoration and management of wetland habitats.	**DOI-FWS** North American Waterfowl and Wetlands Office: (703) 358-1784
Land Acquisition	**Acquires or purchases easements** on high-quality lands and waters for inclusion into the National Wildlife Refuge System.	**DOI-FWS** Division of Realty, National Coordinator: (703) 358-1713
Federal Land Transfer / Federal Land to Parks Program	**Identifies, assesses, and transfers available Federal real** property for acquisition for State and local parks and recreation, such as open space.	**DOI-NPS** General Services Administration Offices Fort Worth, TX: (817) 334-2331 Boston, MA: (617) 835-5700 Or Federal Lands to Parks Leader **NPS** National Office: (202) 565-1184
Wetlands Reserve Program	**Financial and technical assistance** to protect and restore wetlands through easements and restoration agreements.	**USDA-NRCS** National Policy Coordinator NRCS Watersheds and Wetlands Division: (202) 720-3042
Transfers of Inventory Farm Properties to Federal and State Agencies for Conservation Purposes	Transfers title of certain inventory farm properties owned by FSA to Federal and State agencies for **conservation** purposes (including the restoration of wetlands and floodplain areas to reduce future flood potential)	US Department of Agriculture (**USDA**) – Farm Service Agency (**FSA**) Farm Loan Programs National Office: (202) 720-3467, 1632
Financing and Loan Guarantees		
Physical Disaster Loans and Economic Injury Disaster Loans	**Disaster loans** to non-farm, private sector owners of disaster damaged property for uninsured losses. Loans can be increased	Small Business Administration (**SBA**)

	by up to 20 percent for mitigation purposes.	(**SBA**) National Headquarters Associate Administrator for Disaster Assistance: (202) 205-6734
Conservation Contracts	**Debt reduction** for delinquent and non-delinquent borrowers in exchange for conservation contracts placed on environmentally sensitive real property that secures FSA loans.	**USDA-FSA** Farm Loan Programs FSA National Office: (202) 720-3467, 1632 or local FSA office
Clean Water State Revolving Funds	**Loans** at actual or below-market interest rates to help build, repair, relocate, or replace wastewater treatment plants.	**EPA** EPA Office of Water State Revolving Fund Branch Branch Chief: (202) 260-7359 A list of Regional Offices is available upon request
Section 108 Loan Guarantee Program	**Loan guarantees** to public entities for community and economic development (including mitigation measures).	**HUD** Community Planning and Development staff at appropriate HUD field office, or the Section 108 Office in HUD Headquarters: (202) 708-1871
Section 504 Loans for Housing	**Repair loans, grants and technical assistance** to very low-income senior homeowners living in rural areas to repair their homes and remove health and safety hazards.	US Department of Agriculture (**USDA**) – Rural Housing Service (**RHS**) Contact local RHS Field Office, or RHS Headquarters, Director, Single Family Housing Direct Loan Division: (202) 720-1474
Section 502 Loan and Guaranteed Loan Program	Provides **loans, loan guarantees, and technical assistance** to very low and low-income applicants to purchase, build, or rehabilitate a home in a rural area.	**USDA-RHS** Contact the Local RHS Field Office, or the Director, Single Family Housing Guaranteed Loan Division, RHS: (202) 720-1452
Rural Development Assistance -- Utilities	Direct and guaranteed **rural economic loans and business enterprise grants** to address utility issues and development needs.	**USDA**-Rural Utility Service (**RUS**) Contact Rural Development Field Offices, or RHS, Deputy Administrator, Community Programs Division: (202) 720-1490
Farm Ownership Loans	**Direct loans, guaranteed / insured loans, and technical assistance** to farmers so that they may develop, construct, improve, or repair farm homes, farms, and service buildings, and to make other necessary improvements.	**USDA-FSA** Director, Farm Programs Loan Making Division, FSA: (202) 720-1632

State Mitigation Capabilities

Requirement §201.4(c)(3)(ii): [The State mitigation strategy shall include a] discussion of the State's pre-and post-disaster hazard management policies, programs, and capabilities to mitigate the hazards in the area, including: an evaluation of State laws, regulations, policies, and programs related to hazard mitigation as well as to development in hazard-prone areas [and] a discussion of State funding capabilities for hazard mitigation projects … .

Statewide Hazard Mitigation Policy and Program Assessment

Utah's hazard mitigation programs and policies do not lie within one law, policy, agency or program. Utah's mitigation efforts, to lessen the effects of hazards on our citizens, lies in numerous laws, policies and programs. Table C-3, A Summary of Current State Programs and Initiatives and Table C-2 Federal Mitigation Programs, Activities and Initiatives, provides a comprehensive list of these policies and programs and serves as an analysis of whether or not there can be a point of integration with the mitigation plan and whether the capability has changed.

Overall, it is felt that state capabilities have remained steady as it relates to hazard mitigation. While, like most state's, Utah has had to deal with a recession and budget constraints, Utah's mitigation program increased knowledge and capability of staff involved in mitigation activities has increased. It can also be said that this increase in knowledge and capability has shown an increase in collaboration among our mitigation federal, state, and local partners.

Analysis of State Policies Related to Development in Hazard Prone Areas

Utah's policies related to development in hazard prone areas can be summarized as one of personal responsibility. Home rule authority still governs Utah communities. Any changes in development that impacts vulnerability for jurisdictions in hazard prone areas will be addressed in the LHMP's.

Utah's building code basically reflects the International Building Code (IBC). The building codes that have been adopted for Utah are located at the State Construction Code Adoption Act and State Construction Code and approved codes that may also be adopted by local compliance agencies are located at Utah Uniform Building Standard Act Rules starting at section R156-56-701. Building codes are important in hazard prone areas as they ensure that new construction and improved existing construction is more resilient to local hazards and improve life safety functions.

The Utah Municipal Code 10-9 Part 8, empowers cities with legislative authority to enact subdivision ordinances. Subdivision regulations are important in hazard prone areas as they can specify local subdivision requirements.

The Utah Code Title 10, Chapter 9a, Municipal Land Use Development and Management Act, is Utah's local land use enabling authority for local government that "provides for the health, safety, and welfare" in areas subject to natural hazards. Comprehensive planning and zoning are very important in hazard prone areas as they are tools that can establish suitable land uses, especially for hazards that geographic extent (i.e., floodplains and geologic hazards).

Financial Capabilities

At present, similar to most states, Utah does not maintain a hazard mitigation grant fund dedicated to funding mitigation. Due to recent flooding and fires, money has been provided to communities by the State Legislature on a case by case basis for recovery costs. These recent events may lead the way for Utah and its law makers to think about disaster mitigation and recovery that may perhaps look for a permanent way of funding both.

This does not in any way mean the state does not support mitigation. The state funds mitigation through the salaries and benefits of Utah HLS staff. Those staff members include one State Hazard Mitigation Officer (Full Time Employment (FTE) 100 % state) one State Earthquake Program Manager (FTE 50 % state, 50% federal) one State Floodplain Manager (FTE 75% state, 25% federal), one Risk Map Coordinator (50% state, 50% federal) and one State Mitigation/Finance Planner (75% federal 25% state).

After DR-1576 in 2005, the Utah Legislature passed HB 240, which provided DHLS with $25 million for loans to counties affected by disasters. Under HB 240 the disaster loan program was only available for Washington County, DR-1576. HB 240 funds were used as a FEMA 25% match for disaster recovery, 406 Mitigation, or a match to NRCS mitigation and was later turned into a grant that Washington County and municipalities within the county were able to retain. Washington County returned $11 million to Utah DHLS which has been placed in a disaster fund and is waiting legislative rules on how the money is to be used.

In 2006, the small community of Hanksville, in Wayne County Utah received significant damage due to flooding. Unfortunately, no assistance was available through Utah DHLS programs. The Utah Legislature in the 2007 General Session passed SB 1, which provided Wayne County $225,000 for flood mitigation to be used any where in the county.

The State's many mitigation programs are supported through individual operating budgets of state departments and divisions. A detailed look at these is found under State Programs.

Legal Capabilities

The legal structure that enables specific mitigation actions is defined within the legal authorities and legislative mandates for the Utah Division of Homeland Security. They are as follows:

- The Governor's Emergency Operation Directive
- The Robert T. Stafford Disaster Relief and Emergency Assistance Act, amendments to Public Law 93-288, as amended.
- Title 44, CFR, Federal Emergency Management Agency Regulations, as amended.
- Emergency Management Act of 1981, Utah Code 53-2, 63-5.
- Disaster Response Recovery Act, 63-5A.
- Emergency Interim Succession Act, 63-5B.
- State Disaster Recovery Restricted Account 53-2-403

State Program Capabilities

The State of Utah, maintains a philosophy of local responsibility for hazard mitigation. Although, there are no formal State-funded hazard mitigation grants, State agencies provide an integrated network of support, services, and resources for hazard mitigation activities. As demonstrated during past disasters, these agencies are well organized in their delivery and coordination of services. Additionally the Utah DHLS funds (with assistance from Federal funds) in the form of salaries, benefits, and related support for: Mitigation Recovery Section Manager, Floodplain Management (NFIP) Coordinator, Risk Map Coordinator, Financial Planner, Earthquake Program Manager, and a State Hazard Mitigation Officer. These capabilities have changed little since the 2007 Mitigation Plan.

An evaluation of the laws, regulations, authorities, policies, and programs used in Utah to mitigate hazards demonstrate mitigation works exceptionally well. This is evident by Utah's commitment to mitigation. Utah historically has few disasters. The following programs and policies have been effective in achieving mitigation objectives:

- State Floodplain Management Program
- Geologic Hazards Program of the Utah Geologic Survey
- Dam Safety Section of the Division of Water Rights
- Division of Forestry, Fire, and State Lands
- Utah Seismic Safety Commission
- State Hazard Mitigation Team

Mitigation Policies and Programs

A cornerstone of the SHMPC, SHMT, and the Utah DHLS staff with respect to mitigation is and will continue to be the completion of local mitigation goals. The age and inaccuracy of floodplain maps in the State continually rises to the top during the prioritization of mitigation recommendations at the local level. For this reason, the NFIP Community Assistance Program (CAP), and Risk Map success is crucial. Utah MMMS Business Plan-2009, Utah Risk MAP 2010 Grant Narrative, and the CAP GAP Analysis Tool, found in Appendix D, provide an overview of the long-range programmatic commitment to mitigation policy and programs in the state.

Several recent changes in the Wildfire Suppression Fund will have huge effects at the local level on wildfire mitigation and wildfire suppression in WUI areas. During the 2004 Legislative a bill to modify the cooperative agreements between counties and the Division of Forestry, Fire, and State Lands was passed. This modification to the Wildfire Suppression Fund requires a county, in order to be eligible to enter into a cooperative agreement with the state to among other things: adopt a wildland fire ordinance, the 2006 Wildland-Urban Interface Code. This is a huge shift in policy, which will greatly enhance wildfire mitigation.

The following is a review of State departments with disaster responsibilities, describing their existing and planned mitigation programs.

Utah Division Homeland Security (DHLS) ✓

The capabilities of Utah DHLS Hazard Mitigation Program include:

- Prepare, implement, and maintain programs and plans to provide for preventions and minimization of injury and damage caused by disasters.
- Identify areas particularly vulnerable to disasters.
- Coordinate hazard mitigation and other preventive and preparedness measures designed to eliminate or reduce disasters.
- Assist local officials in designing local emergency actions plans.
- Coordinate federal, state, and local emergency activities.
- Coordinate emergency operations plans with emergency pans of the federal governments.

Through the State Hazard Mitigation and Recovery Section, the following occurs:

- Provides a state coordinator for hazard mitigation, the State Hazard Mitigation Officer.
- Provides a central location of the coordination of state hazard mitigation activities.
- Provides coordination for the Federal Pre-Disaster Mitigation Program.
- Floodplain Management Program
- State Earthquake Program
- Map Modernization Program
- Provide coordination for Comprehensive Multi-hazard Mitigation Plan development, implementation, and monitoring.
- Provide for interagency coordination
- Provide development of procedures for grant administration and project evaluation.
- Provide State Hazard Mitigation Team assistance to local governments.
- Provide for development of specific hazard mitigation plans, such as drought and wildfire.
- Provide for local hazard and risk analysis.
- Provide for development of SHMT mitigation recommendations following disasters.

Utah Department of Agriculture ✓

The Utah Department of Agriculture administers programs serving the state's large agricultural sector. The department's response role during and after a disaster period has been to coordinate damage reports for funding needs and provides loan and recovery program information and assistance to disaster victims. This service is provided for flood, drought, insect infestation, fire, livestock disease, and frost.

Assistance during Drought Disasters

A damage reporting network coordinated through the existing County Emergency Board was established during the drought disaster of 1996. Each county agent assembled damage reports in his area and transmitted them through a computer network based at Utah State University. The individual damage reports from each county were recapped in the Department of Agriculture and formed the basis of documentation for an appeal to the legislature for additional funds to mitigate the damage.

Loans Handbook

The department has prepared a handbook listing the types of loans available for flood damage to agriculture, the funding requirements, and applications procedures. This includes

loans from both state and federal sources. There are three loan programs operated by the agriculture department, all of which can be used for flood damage:

1) Rural Rehabilitation Loan Program (federally funded and operated by the state)
2) Agriculture Resource Development Loan Program (state funded)
3) Emergency Loan Program (state funded)

Soil Conservation Program

The Department of Agriculture also administers the ongoing Soil Conservation Program. In each of the state's thirty-nine soil conservation districts, three unpaid, elected supervisors offer technical assistance and consultation on watershed protection. The state offers limited technical and planning assistance through a staff member. The program works cooperatively with the federal Soil Conservation Service, which provides most of the technical assistance. The ongoing program is not regulatory, but is directed towards improved water use and soil conservation.

Disaster Easements

Because of the similarity between past events, the department is now working on a permanent hazard mitigation concept known as "Disaster Easements", which may have widespread agreements with irrigation companies, water districts, or water users' associations for the purpose of routing flood water through local communities.

Monitoring Ground Water Quality

The Department also monitors the quality of groundwater, including individual wells and springs throughout the State.

Non-Point Source Pollution

The Department's Non-Point Source Pollution Program focuses on flood prevention through reduction of erosion, vegetating streams, and restoring "natural stream structure". The Department also monitors drought conditions, which are a precursor to wildfire.

Department of Community and Economic Development ✓

Community Impact Board

The Utah Permanent Community Impact Fund Board provides loans and/or grants to state agencies and sub-divisions of the state, which may be socially or economically impacted by mineral resource development of federal lands.

Permanent Community Impact Fund

The Permanent Community Impact Fund provides loans and/or grants to state agencies and subdivisions of the state, which are or may be socially or economically impacted, directly or indirectly, by mineral resource development on federal lands.

Under the Federal Mineral Lease Act of 1920, leaseholders on public land make royalty payments to the federal government for the development and production of non-metalliferous minerals. In Utah, the primary source of these royalties is the commercial production of fossil fuels on federal land held by the U.S. Forest Service and the Bureau of Land Management.

Since the enactment of the Minerals Lease Act of 1920, a portion of these royalty payments, called mineral lease payments, have been returned to the state in an effort to help mitigate the local impact of energy and mineral developments on federal lands.

Funding Options
The Board has the option of funding projects with loans and/or grants. The Board's preferred financing mechanism is an interest-bearing loan.

Loan Requirements
In providing financial assistance in the form of a loan, the Board may purchase an applicant's bonds only if the bonds are accompanied by legal opinion of recognized municipal bond counsel to the effect that the bonds are legal and binding under applicable Utah Law.

The Board may purchase either a taxable or tax-exempt bond. The board may purchase taxable bonds if it determines, after evaluating all relevant circumstances, including the applicant's ability to pay, that the purchase of the taxable bonds is in the best interest of the state and the applicant.

Grants
Grants may be provided only when the other financing mechanisms cannot be utilized, where no reasonable method of repayment can be identified, or in emergency situations regarding public health and/or safety.

Community Development Block Grant
The Community Development Block Grant, or CDBG program, provides funding from the federal government's Department of Housing and Urban Development or HUD, to small cities and counties in the State of Utah.

Utah Division of State History
The Mormon Pioneers founded the Utah State Historical Society, Utah's Division of State History, in 1897 on the 50th anniversary of the first settlement in the Salt Lake Valley. The Society became a state agency in 1917, now housed in the historic Rio Grande Depot since 1980. The Division stimulates archaeological research, study; oversees the protection and orderly development of sites; collects and preserves specimens; administers site surveys; keeps excavation records; encourage and supports the preservation of historic and pre-historic sites and publishes antiquities records. The Division also issues archaeological permits and consults with agencies and individuals doing archaeological work.

Preserving and Sharing Utah's Past
The mission of the State Division of History is "preserving and sharing Utah's past for the present and the future".

State Historical Preservation Officer (SHPO)
The SHPO administers the Section 106 process (national Historic Preservation Act) in Utah. The SHPO also serves on the Utah State Hazard Mitigation Team, providing guidance on historical and cultural preservation regulations.

Historic properties include districts, buildings, structures, objects, landscapes, archeological sites, and traditional cultural properties that are included in, or eligible for inclusion in, the National Register of Historic Places. These properties are not just "old buildings" or "well-known historic sites, but places important in local, state, or national history. Facilities as diverse as bridges and water treatment plants my, be considered historic.

Utah Geological Survey (UGS) ✓

The Utah Geologic and Mineral Survey is the principal state agency concerned with geologic hazards. Through years of study, the UGS has developed considerable information on Utah's geologic hazards. When geologic events occur or threaten to occur, the UGS is consulted by other state agencies, local governments, and private organizations for assistance in defining the threat from Geologic hazards. The UGS works in partnership with other agencies, such as Utah HLS, in relating the threats from natural hazard to the communities at risk.

Functions

The functions of the UGS include the following:

- Evaluation of individual geological hazards;
- Participation on local government and state agency technical teams;
- Prediction of the performance on individual slides once they began to move;
- Coordination and awareness of research efforts undertaken by other agencies;
- Provide information on status of individual geologic hazards;
- Reconnaissance reports on status of hazards statewide;
- Advise Division of Water Rights on geologic hazards associated with dam sites; and
- Provide geologic information for use during planning of remedial actions.

Laws/authorities/policies of the Utah Geological Survey for Conducting Mitigation

Utah Code Annotated

Chapter 73 Geological and Mineral Survey
Section 68-73-6 Objectives of Survey
(1) Determine and investigate areas of geologic and topographic hazards that could affect the safety of, or cause economic loss to, the citizens of this state; (f) assist local and state government agencies in their planning, zoning, and building regulations functions by publishing maps, delineating appropriately wide special earthquake risk areas, and, at the request of state agencies, review the citing of critical facilities:

Utah State Office of Education (USOE) Rule R277-455 Standards and Procedures for building plan review

R277-455-4 Criteria for Approval; to receive approval of a proposed building site, the local school district must certify that:

Staff of the Utah Geologic Survey have reviewed and recommended approval of the geologic hazards report provided by the school districts geo-technical consultant.

Division of Water Resources ✓

The Division's role of planning, funding and constructing water projects serves as both active and passive hazard mitigation against drought and flood situations throughout the state. The various State Regional Water Plans contain brief summaries of flood threat and risk for each basin.

The Division is one of seven agencies in the State Department of Natural Resources. The eight-member Water Resources Board, appointed by the governor, administers three state water conservation and development funds. These include:

- ***Revolving Construction Fund*** – This fund started in 1947 with 1 million Legislative appropriations to help construct irrigation projects, wells and rural culinary water systems. Further appropriations have added to this fund.
- ***Conservation and Development Fund*** – This fund was created in 1978 wit the sale of 25 million in general obligations bonds. Money was added to this fund with bond sales in 1980 and 1983. The C & D Fund generally helps sponsors finance larger multi-purpose dams and water systems.
- ***Cities Water Loan Fund*** – Established with an initial legislative appropriation of 2 million dollars in 1974, and with continued appropriations, this fund provides financing to help construct new culinary water projects for cities, towns, improvement districts, and special service districts.

Construction Funds

In addition to overseeing these three construction funds, the Division also manages the State funds appropriated each year for renovation and reconstruction of unsafe dams. As the funding arm of the state for water resource projects the Division works closely with Water Rights, the Regulatory arm of the state charged with jurisdiction over all private and state owned dams.

Water Resource Planning

The Division is also charged with the general water resource planning for the state. The State Water Plan is a process that is coordinated to evaluate existing water resources in the state, determine water-related issues that should be confronted and recommend how and by who issues can be resolved. The plan identifies programs and practices of state and federal agencies, water user groups and environmental interests and describes the state's current, future, and long-term water related needs. The plan is continually updated using current hydrologic databases, river basin simulations, water supply and demand models and water related land use inventories. Revisions reflect the latest water conservation and development options concerning water rights, water transfers, population, zoning, and many other complex issues for the next 50 years in the state's major river basins.

Utah Division of Forestry, Fire, and State Lands ✓

The Division of Forestry, Fire & State Lands utilizes the principles of stewardship and ecosystem management to assist non-federal landowners in management of their natural resources. The agency provides wildland fire protection for non-federal landowners

commensurate with risk; and optimizes the benefits from ecosystem based, multiple-use management of resources held in the public trust. Wildfires are managed from six area offices 1) Bear River Office, 2) Northeast Area, 3) Wasatch Front Area, 4) Central Area, 5) Southwest Area, and 5) Southeast Area. The Division operates under the authority of the Utah Code Annotated 65-A-3-1 through 10.

The Lone Peak Hotshots

The Lone Peak Hotshots are a nationally recognized Type 1 Interagency Hotshot Crew (IHC), based out of the Lone Peak Conservation Center, in Draper, Utah. Established in 2001 under cooperative partnership between the United States Forest Service Region 4 and the Utah Division of Forestry, Fire and State Lands, Lone Peak Hotshots replaced the Flame-in-go Hotshots (FIG's).

With the new agreement in place, the Lone Peak Hotshots became the first all civilian, state sponsored, interagency hotshot crew in the nation. Operating under this agreement, Lone Peak is held to strict local standards in addition to all of the national IHC standards that the Forest Service and Bureau of Land Management hotshot crews must follow. Two notable differences from other hotshot crews are: Lone Peak IHC must be available nationally for dispatch 180 days each year and seasonal employees may work up to 12 months each season.

Each year Lone Peak's season starts with two weeks of critical training from mid-April to the beginning of May. After completing at least 80 hours of critical training and a complex base review, the crew will go available for national dispatch around May 1st. Once available the crew will stay available for assignments until the end of October.

Wildland fire suppression is the number one priority of the Lone Peak Hotshots, but additional work includes fuels reduction and natural resources based projects. This additional work allows the crew to remain in top operating condition during slow times of the fire season. The crew operates with twenty-three crew members and opportunities for detailers are available. Five permanent full time staff members provide supervision to seventeen seasonal crew members each fire season.

Lone Peak IHC is an integral part of a large number of wildland firefighting resources operating out of the Lone Peak Conservation Center (LPCC). With all the resources using the same equipment and operating under very high standards, cross training opportunities are common. In addition to training, Lone Peak IHC draws excelling employees from these other resources to fill positions that may come open during the fire season. During the off season, Lone Peak IHC's turn-over rates are generally low, making the hiring of the new crewmembers very competitive.

Since the inception of the Lone Peak Hotshots, the crew has developed into a very professional and respected resource in the fire community. Everyday strides are made to improve not only the crew but the LPCC program as a whole

National Fire Plan

The Division administers the State responsibilities of the National fire Plan, a current emphasis of the U.S. Congress, which also addresses hazard and risk analysis and hazard mitigation.

Living With Fire Committee
The Division works in partnership with the U.S. Forest Service, Bureau of Land Management, and various other entities tasked with suppressing wildland fires on the "Living With Fire" program promoting wildland fire mitigation.

Rule R652-122. County Cooperative Agreements with State for Fire Protection.
As in effect on November 1, 2007. This rule requires the division to establish minimum standards for a wildland fire ordinance and specify minimum standards for wildland fire training, certification and wildland fire suppression equipment. This rule is promulgated under general rulemaking authority of subsection 65A-1-4(2).

Utah Division of State Parks and Recreation ✓

The goal of the Division of Parks and Recreation is to enhance the quality of life for residents and visitors of our state through parks, people, and programs. They are responsible for protecting, preserving, and managing many of Utah's natural and heritage resources.

Hazard and Risk Analyses
The Division develops hazard and risk analyses for the State Parks as part of the park resource management plans. The Utah Division of Homeland Security produced one analysis for Snow Canyon State Park in Washington County.

Non-Motorized Trail Program
The Recreational Trails Act of 1991 charged Utah State Parks and Recreation with coordinating the development of a statewide network of non-motorized trails. The Non-Motorized Trail program makes state and federal funds available on a 50/50 matching basis to any federal, state, or local government agency, or special improvement district for the planning, acquisition, and development of recreational trails.

Grants from State Parks Boards
The council advises the Division of Parks and Recreation on non-motorized trail matters, reviews requests for matching grant fiscal assistance, rates and ranks proposed trail projects and along with State Park's staff provides recommendations for funding to the State Parks Board.

Riverway Enhancement Program
In 1986, the Utah Legislature passed a bill, which established the Riverway Enhancement Program. The program makes state funds available on a 50/50 matching basis to state agencies, counties, cities, towns, and/or special improvement districts for property acquisition and/or development for recreation, flood control, conservation, and wildlife management, along rivers and streams that are impacted by high density populations or are prone to flooding. Public outdoor recreation should be the primary focus of the project.

Utah Division of Water Rights ✓

The Division of Water Rights is the state agency that regulated appropriation and distribution of water in the State of Utah. It is an office of public record. The Utah State Engineer's Office was

created in 1897. The State Engineer's Office is the chief water rights administrative officer. A complete "water code" was enacted in 1903 and was revised and reenacted in 1919. This law, with succeeding complete reenactments of State statutes, and as amended, is presently in force mostly as *Utah Code, Title 73*. In 1963, the name was changed from State Engineers office to the Division of Water Rights.

All waters in Utah are public property. A water right is a right to the use of water based upon 1) quantity, 2) source, 3) priority date, 4) nature of use, 5) point of diversion, and 6) physically putting water to beneficial use.

Regulate Dams

The State engineer has the authority to regulate dams for the purpose of protecting public safety. Dams are classified according to hazard, size, and use. The dam inventory gives the identification, location, construction parameters, and the operation and maintenance history of the dams in Utah.

Stream Alterations Program

The Utah State Engineer's Office administers a Stream alterations program with the purpose of regulation activities affecting the bed or banks or natural streams. The State Engineer's working definition of a natural stream is any natural waterway in the state, which has flows of sufficient duration to develop a characteristic ecosystem distinguishing it from the surrounding environments. Any individual planning an activity that will affect a natural stream must first obtain a Stream Alterations Permit from this office.

Most proposals reviewed by the State, are covered by General Permit 40, which authorizes the state to have its Stream Alteration Permit fulfill the requirements of Section 404 of the Clean Water Act for most activities. General permit 40 does not apply in some instances and a U.S. Army Corps of Engineers Individual Permit is required. Projects requiring this additional permit include those involving wetlands, threatened or endangered species, properties listed on the National Historic Register, stream relocation, or the pushing of streambed material against a stream bank.

Dam Safety Program

The Dam Safety Section of the Division of Water Rights was established under Chapters 73-5a 101 thru 73-5a 702 including chapters 73-2-22 for Flood Control and the Chapter 63-30-10 Waiver of Immunity of the Utah Code and Rules R655-10 thru R655-12-6A. The program basically has jurisdiction over all private and state owned dams in the state during design, construction, operation, and decommissioning. This involved periodic inspections according to hazard classifications, inventory maintenance, design, and construction approval and systematic upgrade of all the high hazard structures to current dam safety Minimum Standards and creation of Emergency Action Plans for High Hazard dams. Since 1991, detailed dam reviews have been undertaken by the staff and by private consulting firms. Since 1995, the State Legislature has provided 3-4 million dollars per year to finance 50% of the instrumentation, investigations, and design and 80 to 90 % of the construction costs of retrofitting and upgrading deficient dams, starting with the worst dams in the most hazardous locations.

The impetus for this dam safety program has been in reaction to dam failures, both in Utah and in other states, including the Teton Dam in Idaho and the Trial Lake Dam in Summit County and the Quail Creek Dam near St. George Utah. Since the establishment of our Minimum Standards program we have fostered the repair of dozens of dams and have not had a catastrophic failure since.

Future recommendations include continuation of the funding for dam upgrades for all the high hazard dams, and then the moderate hazard dams, continued annual inspections for maintenance items and dangerous deficiencies, upgrading EAP, and hazard assessment to reflect downstream development. Inclusion of the scanned design drawings and inundation maps from the EAP studies is being considered for our web page for public information and emergency access. Possible expansion of the program to cover canals and dikes has been considered.

Utah Division of Wildlife Resources ✓

It is the mission of the Utah Division of Wildlife Resources to serve people of Utah as trustee and guardian of the State's wildlife. Regulates hunting, fishing and trapping, and promotes recreational, educational, scientific and aesthetic enjoyment of wildlife.

Wildlife Habitats and Hazards

Wildlife species and/or their habitats are frequently exposed to hazards. These may be either natural or human influenced (i.e. drought, flood, fire, wind, snow, wetland drainage, water diversions, hazardous material spills, improper/illegal chemical use, earthquake, and other land or water construction/development). Impact resulting either directly or indirectly, from individuals or an accumulation of several hazards, may cause but not be limited to: decreased water supply, stream/lake channel/basin morphology change, riparian/upland vegetation loss or degradation, and impairment of water quality. These in turn have a varying influence, in the extreme causing death or at a minimum temporary stress, on wildlife populations and their habitats. Hazards mentioned may affect a fairly large geographic area or be very localized in nature.

While the Division of Wildlife Resources (DNR) is charged with the management of wildlife, they do not have regulatory authority over water appropriations, water quality, development, or land management; except as allowed or occurring on properties they own. Therefore, when hazards occur, outside DWR property, DWR is limited to be a participating influence only through comments to the other regulatory agencies or individuals.

DWR management of wildlife is carried out largely through regulation of taking controlling, disturbance and/or possession of wildlife, and introduction of movement of species. However, there are numerous non-regulatory means (i.e. conservation agreements, memorandum of understanding, contract, lease agreements, cooperative agreements, and technical assistance) by which DWR interacts with other agencies, groups and individuals, to have an influence on wildlife and/or their habitat.

Hazard Areas of Commentary Interaction

While not being able to control/regulate many of the elements necessary for the benefit of wildlife; DWR provides technical comments for the maintenance, protection, and enhancement of wildlife and/or habitats for various value reasons. It is too extensive list all the areas of comment; however, the following are examples of fairly frequent concern:

- Steam Channel Alteration Permit Applications
- Water Rights Filings
- Energy and Mineral Exploration and Extraction Applications
- Federal Agency land management plans
- Waste Water Discharge Permit Applications
- Hydroelectric plant licensing or regimenting
- Urban and rural development project planning
- Utility transmission line style and locations
- Wetland alteration
- Federal land management planning
- Highway constructions

The Utah Division of Drinking Water ✓

Division of Drinking Water's Mission Statement is to "protect the public against waterborne heath risks through assistance, educations, and oversight". The Division acts as the administrative arm of the Utah Drinking Water Board. It implements the rules, which they adopt. As such, it is engaged in a variety of activities related to the design and operation of Utah's public drinking water system. The Utah Drinking Water Board is an 11-person board appointed by the Governor. It is empowered by Title 19, Chapter 4 of the Utah Code to adopt rules governing the design, operations, and maintenance of Utah's "public drinking water system".

Safe Drinking Water Act

There is a Federal Safe Drinking Water Act, which applies to all public drinking water systems in the country. The U.S. Environmental Protection Agency (EPA) has given Utah "primacy" for enforcing the federal act within its boundaries. To qualify for this Utah's laws and rules governing public drinking water systems must be at least as strict as the federal law.

Sanitary Surveys

The Division performs sanitary surveys on the water systems, which is a compliance action that identifies system deficiencies.

Emergency Response Plans

The Division of Drinking Water requires water utilities to prepare emergency response plans under the State Safe Drinking Water Act, Utah Code Section 19-4. The Division operates according to DDW Rules: R309 gives them authority to administer actions: R309-301 through R309-104 and R309-113, R309-150, R309-301, and R309-211.

Utah Division of Solid and Hazardous Waste ✓

The Tier II Chemical Inventory report, required by the Federal Emergency Planning and community Right-to-Know Act, requires facilities to submit lists of hazardous chemicals present on site. These reports are computerized and the information is provided to local emergency planning committees, the general public, and others for contingency planning purposes. To implement the Federal law, the State operates under Utah State Code, Section 63-5-5. The Division of Solid and Hazardous Waste requires that hazardous waste treatment storage and disposal facilities prepare and emergency response plan as required by regulations authorized by the State Solid and Hazardous Waste Act, Utah Code Section 19-6.

Other Agency programs are regulatory in nature requiring proper use or disposal of hazardous substances or pollutants. For example the Division of Solid and Hazardous Waste regulates the disposal of hazardous waste, the Division of Radiation Control regulates the proper usage and disposal of radioactive materials. As such there is a threat mitigation nature to these programs.

Utah Division of Water Quality ✓

The Utah Division of Water Quality protects, maintains, and enhances the quality of Utah's surface and underground water for appropriate beneficial uses; the Division of Water Quality regulates discharge of pollutants into surface water, and protects the public health through eliminating and preventing water related health hazards which can occur as a result of improper disposal of human, animal, or industrial wastes while giving reasonable consideration to the economic impact.

Water Quality Fund and Wastewater Treatment Project Fund: The Division Manages the Water Quality Revolving Fund that can be used by local governments for water quality projects and a Wastewater Treatment Project Fund.

Abating Watershed Pollution: Federal and State regulations charge the Division with "preventing, controlling, and abating" watershed pollution. Other state and local agencies have similar responsibilities. The Watershed Approach forms partnerships with these groups to pool resources and increase the effectiveness of existing programs. For each watershed management unit, a watershed plan will be prepared. The watershed plan addresses management actions at several spatial scales ranging from those that encompass a watershed management unit to specific sites that are tailored to specific environmental conditions. Ground water hydrologic basins and eco-region areas encompassed within the units will also be delineated.

State Revolving Fund Program

In 1987, Congress replaced the Construction Grants Program, with the State Revolving Fund Program. Rather than provide direct grants to communities, the federal government provides each state with a series of grants, then each state contributes a 20 percent state match. Grants from the federal government are combined with state funds in the Water Quality Project Assistance Program (WQPAP) and are used to capitalize a perpetual source of funds to finance water quality construction control activities at below market interest rates. Projects eligible for WQPAP financing include such traditional activities as construction of wastewater treatment plants and sewers. The program also will finance non-traditional water

quality-related activities such as agricultural runoff control, landfill closures, contaminated industrial property (Brownfield) remediation, stream bank restoration, and wellhead protection.

Table C-3 Summary of Current State Program and Initiatives

Emergency Management				
Type of Existing Protection	**Type of Disaster Assistance**	**Description**	**Effectiveness and/or Enforcement**	**Improvement and/or Changes Needed**
Civil Defense Act of 1950	Pre and Post Disaster	Authorizes the creation of the Utah Civil Defense Agency (the predecessor to Utah HLS) and the development of a statewide civil defense program.	Give Utah HLS statewide authority to coordinate emergency management activities statewide.	
Emergency Management Act of 1981, Utah Code 53-2, 63-5.	Pre and Post Disaster	Establishes an emergency/disaster management system.	Establishes Utah HLS	
Disaster Response Recovery Act, Utah Code 63-5A	Post Disater	Assist state and local government to effectively provide emergency disaster response and recovery assistance.	Utah HLS	
Emergency Interim Succession Act, Utah Code 63-5B	Post Disaster	Establish and define interim successors for state, local, and judicial branch.	Required for continuity of government	
The Emergency Planning and Community Right-to-Know Act (EPCRA) to 1986 (Title 40 CFR, Part 350-372	Pre and Post Disaster	EPCRA establishes requirements for federal, state and local governments, Indian Tribes, and industry regarding emergency planning and "Community Right-to-Know reporting on hazardous and toxic chemicals. The "Community Right-to-Know" provisions help increase the public's knowledge and access to information on chemicals at individual facilities, their uses, and releases to the environment. State and communities, working with facilities, can use the information to improve chemical safety and protect public health and the environment.	State Emergency Response Commission (SERC) is a part of Utah HLS. SERC designates Local Emergency Planning Committees (LEPC), which establish procedures for receiving and processing public requests for information collected under EPCRA and reviews local emergency response plans. LEPC may also act as a conduit for all	

			emergency planning in a County.	
County Cooperative Agreements with State for Fire Protection, Amends Utah Code 65A-8-6	Pre and Post Disaster	Requires Counties, in order to be eligible to enter into a cooperative agreement with Division of Forestry, Fire and State Lands relating to fire protection to: adopt a wildland fire ordinance; require the county fire department or private provider to meet cert minimum standards; and file an annual budget; and prevents counties that do not enter into a cooperative agreement with the division from being eligible for financial assistance from the division.	Utah Forestry, Fire, and State Lands.	Changes have been made to require wildfire mitigation planning to be eligible for the fund
State Disaster Recovery Restricted Account Utah Code 53-2-403	Post Disaster	Creates a restricted account in the General Fund that may be used by State Agencies to recovery from disasters other than wildfire.		
Local government disaster funds, Utah Code 53-2-405	Post Disaster	Allows local governments to create and maintain by ordinance a special fund known as a local government disaster fund. The money in the fund must be used only to fund services and activities of the local government in response to a declared disaster within the boundaries of the local government. No more than 10% of fiscal year total estimated revenues of the local government may be set in the fund.		
Emergency powers of State Engineer (State Water Resources) for Flood Mitigation Activities, Utah Code 73-2-23	Post Disaster	In addition to the emergency powers under Section 73-2-22, the state engineer shall assist counties in emergency flood mitigation on inter-county waterways when all the following conditions exist: (a) two or more counties are involved; (b) the flood mitigation activity has or may have adverse effect on the county; (c) the county executive of that adversely impacted county requests the state engineer's involvement; (d) the requesting county is providing an ongoing flood control program with jurisdiction-wide funding equivalent	State Engineers Office	

		to .0004 per dollar of taxable value of taxable property; and (e) the requesting county has established a flood control program through zoning. (2) Multi-county flood mitigation activities by the state engineer shall include: (a) assisting the counties in emergency flood mitigation planning; (b) furnishing engineering or other technical services; (c) making recommendations in emergency situations, and, if requested, participating in making emergency flood control decisions; and (d) in the event a decision is not reached, the final decision-making authority. (3) The assistance or involvement will cease when in the state engineer's judgment the flood conditions or potential for flooding subsides or when the county governing bodies of all affected counties request that the jurisdiction cease.		
Hazard Mitigation Grants for Plans & Projects				
Hazard Mitigation Grant Program (HMGP) – Robert T. Disaster Relief and Emergency Assistance Act, Public Law 3-288	Post Disaster	Authorized under Section 404 of the Stafford Act, the Hazard Mitigation Grant Program (HMGP) provides grants to States and local governments to implement long - term hazard mitigation measures **after a major disaster declaration**. The purpose of the program is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster declaration	FEMA and Utah HLS. HMGP was used after DR-1576 to retrofit the Weber University Student Union Center and after and DR-1598 to retrofit a Unified Fire Authority fire station	Increase percentage back to 15%. Also address tax issues on individual projects (relocation and elevation)
Pre-Disaster Mitigation Program (PDM) Grants for Mitigation Planning and Projects.	Pre-Disaster	The Pre-Disaster Mitigation Program (PDM) allows local governments to receive technical and financial assistance to perform cost - effective pre - disaster natural hazard mitigation activities. All entities wishing to remain in contention for pre and post disaster federal assistance must participate in the planning process and promulgate the completed plan.	The State of Utah received over $12 million in PDM funding from FEMA to aid in mitigation planning and projects. Utah has received five planning grants and 10 project grants.	Establish a set-aside planning funds for States. Use the Mitigation plan in identifying projects.

Flood Mitigation Assistance (FMA) Planning Grants	Pre-Disaster	FMA was created as part of the National Flood Insurance Reform Act (NFIRA) of 1994 (42 U.S.C. 4101) with the goal of reducing or eliminating claims under the (NFIP). Funding for the program is provided through the National Flood Insurance Fund, and FMA is funded at $20 million nationally. FMA provides funding to assist States and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the National Flood Insurance Program (NFIP).	This program is not effective in Utah due the requirement on focus on repetitive loss structures. Utah has a limited number (6) of repetitive loss structures. This change in focus to repetitive loss on the federal level has limited critical funding for local flood mitigation planning, technical assistance and small project grants.	Federal government should reconsider the focus on repetitive loss structures, especially in States that do not have a significant repetitive loss issues.
Flood Mitigation Assistance (FMA) Project Grants	Pre-Disaster	There are three types of grants available under FMA: Planning, Project, and Technical Assistance Grants. FMA Planning Grants are available to States and communities to prepare Flood Mitigation Plans. NFIP-participating communities with approved Flood Mitigation Plans can apply for FMA Project Grants. FMA Project Grants are available to States and NFIP participating communities to implement measures to reduce flood losses. Ten percent of the Project Grant is made available to States as a Technical Assistance Grant. These funds may be used by the State to help administer the program. Communities receiving FMA Planning and Project Grants must be participating in the NFIP. A few examples of eligible FMA projects include: the elevation, acquisition, and relocation of NFIP-insured structures.	FEMA	Emphasis on repetitive loss should be removed.
Hazard Identification & Mapping				
Multi-Hazard Flood Map Modernization Program/Risk MAP (Federal and State)	Pre-Disaster	The goal of FEMA's Map Modernization Program, (Risk MAP) is to upgrade the nation's 100,000 panel flood map inventory by: • Developing up - to - date flood hazard data for all flood prone areas nationwide to support sound floodplain management and prudent flood insurance decisions.	Age of Flood Maps in Utah • 15% are less than 5 years old • 2% are 5 - 10 years old	Continue ongoing funding of flood mapping in States and ensure new maps reflect new H and H. It is also critical to continue funding for State Mapping Coordinator

		• Providing the maps and data in digital format to improve the efficiency and precision with which mapping program customers can use this information. • Fully integrating FEMA's community and state partners into the mapping process to build on local knowledge and efforts. • Improving processes to make it faster to create and update the maps. Improving customer services to speed processing of flood map orders and raises public awareness of flood hazards.	• 13% are 11 - 15 years old 70% are more than 15 years old State has developed and is implementing two plans: State Business Plan and Five Year Strategic Plan. Both plans focus on flood mapping and the overall NFIP in the State.	Coordinator positions.
Public Safety				
Utah State Building Code - Utah Uniform Building Standards Act, 58-56	Pre-disaster	Building codes and amendments adopted by the State of Utah	Adopted IBC.	
National Dam Safety Act - (Public Law 104 - 303) was signed into law. Section 215 of Public Law 104 - 303	Pre-Disaster	Established a National Dam Safety Program and named the Director of the Federal Emergency Management Agency (FEMA) as its coordinator. The purpose of the National Dam Safety Program, as expressed in Section 215(a) of Public Law 104 - 303, is to "reduce the risks to life and property from dam failure in the United States through the establishment and maintenance of an effective national dam safety program to bring together the expertise and resources of the federal and non - federal communities in achieving national dam safety hazard reduction."	The Utah State Engineer's Office, Division of Water Rights, Department of Water Resources, has the authority to regulate dams for the purpose of protecting public safety. Dams are classified according to hazard, size, and use. The dam inventory gives the identification, location, construction parameters, and the operation and maintenance history of the dams in Utah.	
"Utah Fire	Pre-Disaster	The fire officers of any city or county shall enforce the		

Prevention and Safety Act." 1993		rules of the state fire marshal in their respective areas. The state fire marshal may enforce the rules in: areas outside of corporate cities, fire protection districts, and special districts organized for fire protection purposes; and state owned property, school district owned property, and privately owned property used for schools located within corporate cities and county fire protection districts, asylums, mental hospitals, hospitals, sanitariums, homes for the aged, residential health care facilities, children's homes or institutions, or similar institutional type occupancy of any capacity. The state fire marshal may enforce the rules in corporate cities, counties, and fire protection districts, and special service districts organized for fire protection purposes upon receiving a request from the chief fire official or the local governing body.		
Management of Forest Lands and Fire Control, Utah Code 65A-8-1	Pre and Post Disaster	Division of Forestry Fire and State Lands responsibilities for fire control and the preservation of forest, watershed, and other lands to include reciprocal agreements for fire protection to include federal agencies, to provide fire protection for land and improvements for which the organization normally provides fire protection.	UFF&SL	

State of Utah Federal Surplus Property Program	Pre and Post Disaster	The Federal Surplus Property Program is a Utah State governmental program that is tasked with the responsibility of locating, acquiring and distributing federal surplus personal property to what are commonly referred to as "donees" consisting of state and local governments and eligible non-profit organizations. Property is acquired from various federal agencies and military installations throughout the country. Property is "screened" directly for donees based upon their wants and needs, or it is brought into our warehouses on a speculative basis and is displayed for customer viewing. Items normally available includes office furniture, generators, vehicles, boats, power tools, food service equipment, construction materials, clothing, beds, medical equipment, paints and solvents, fire fighting equipment, heavy equipment, etc. Eligibility is limited to all state and local governments and eligible nonprofit organizations. Nonprofit organizations must serve the public in one of the following areas: Public Health, Educational Activity, Provider of Assistance to the Homeless, Programs for Older Individuals, Museums, Sheltered Workshops, Day Care		
Planning and Technical Assistance				
Envision Utah – Planning references; Utah Code 10-8-301/302 and 17-27-310/302	Pre-Disaster	In 1997, the state partnered with *Envision Utah*, a public/private community partnership dedicated to studying the effects of long-term growth, creating a publicly supported vision for the future, and advocating the necessary strategies necessary to achieve this vision. Land Use, population and growth analysis, transportation and circulation, Environmental Analysis (which includes topography, climate, natural features and hazards, man made environmental impacts and an analysis of lands suitable for development), Public Utilities and facilities, social conditions (housing and redevelopment), economic analysis, community visual quality and urban design.	Envision Utah	Greater emphasis on natural hazards in the planning areas.

Pre-Disaster Mitigation Program (PDM) Grants for Mitigation Planning and Projects. Hazard Mitigation Grant Program (HMGP) – Robert T. Disaster Relief and Emergency Assistance Act, Public Law 3-288	Pre/Post-Disaster	Utah has the highest percentage of submitted PDM grants awarded nationwide. This is due to the technical assistance that the SHMT provides to the applicants from identifying projects to training to review and everything between. DHLS is highly involved in the PDM and HMGP process from the beginning of each application. HLS has done the BC for many of the applicants and has reviewed the BC for the rest. DHLS is highly involved in all mitigation planning done in the State. HLS manages all mitigation planning, offers assistance, mitigation training to locals and reviews plans.	HLS, SHMT $17 million in PDM-C grants for plans and projects	
The Utah Energy Office – Department of Natural Resources	Pre-Disaster	Utah Energy Office promotes efficient use and appropriate development of energy resources in Utah. This mission is accomplished by providing the public, private industry, nonprofit organizations, and government agencies with information, objective research, technical assistance, and energy-related policy analysis, as well as access to federal and state energy programs. As an example, the "Cool Communities" program works to reduce energy consumption and increase air quality in Utah by promoting "cool" strategies of appropriate placement of trees and shrubs and use of reflective roofing and pavements. Partnering with many groups, the program is involved in education and demonstration projects, and incorporating "Cool Communities" strategies into municipal policy and city ordinances. Utah offers a state income tax credit for renewable energy systems. The credit for residential systems is 25 percent of the equipment and installation cost up to a maximum of $2,000. Commercial systems receive a 10 percent tax credit up to a maximum of $50,000. The technologies included are: solar electric, solar thermal, passive solar, wind, and hydropower. Businesses can also receive the tax credit for biomass systems.		

LeRay McAllister Critical Land Conservation Fund – State of Utah, Governor's Office of Planning and Budget	Pre and Post Disaster	The *LeRay McAllister Critical Land Conservation Fund (LMF)* is an incentive program providing grants to encourage communities and landowners to work together to conserve their critical lands. The fund targets lands that are deemed important to the community such as agricultural lands, wildlife habitat, watershed protection, and other culturally or historically unique landscapes. LMF Conservation Funds can be used to protect lands possessing resources deemed critical to your community. These resources may include, but are not limited to agricultural lands, historical and cultural sites, wildlife habitat, natural recreation, wetlands and watershed protection areas. Funds may not be used to purchase land for "active recreation" sites such as city parks containing constructed playgrounds, baseball or soccer fields, etc. The funded project must be something that will be preserved predominantly in, or restored to its natural state		

		or used for agricultural production**.**		
Utah Tomorrow – Strategic Plan, Utah Code 36-18-1	Pre-Disaster	*Utah Tomorrow* is a broad-based, ongoing strategic planning effort designed to enable all segments of Utah society to focus on and measure progress toward specific goals for Utah's future. Protecting, enhancing and restoring watersheds are a key strategic element of the plan as well has drought mitigation practices.		
Other Programs				
Resource Development and Coordinating Committee, Governor's Office of Planning and Budget	Pre and Post Disaster	The RDCC assists the State Planning Coordinator in fulfilling the responsibilities of reviewing and coordinating technical and policy actions which may affect the physical resources of the state and facilitate the exchange of information on such actions among State agencies and other levels of governments.		

Utah Pre Disaster Mitigation (PDM) Project and Planning Grants 2003 – 2010

Federal Share - **$17,054,329** (49%)
State Share - $**17,461,883** (51%)
Total: $**34,516,213**

Year	Project/Planning	Federal	Non Federal	Total
2003	University of Utah - Seismic	$2,994,038	*$2,519,111	$15,513,149
	Utah Division of Homeland Security - Planning	$50,000	$16,667	$66,667
2003 Total		**$3,044,038**	**$12,535,778**	**$15,579,816**
2005	Jordan Valley Water – Seismic	$1,866,750	$622,250	$2,489,000
	Orem City Fire – Seismic	$75,000	$25,000	$100,000
	Orem City Fire – Seismic	$75,000	$25,000	$100,000
	Layton City Fire – Seismic	$268,609	$89,536	$358,145
	Jordan Valley Water – Seismic	$489,000	$163,000	$652,000
	Emigration Canyon - Fire	$180,664	$60,221	$240,885
	University of Utah - Planning	$537,341	$179,114	$716,455
Total 2005		**$3,492,364**	**$1,164,121**	**$4,656,485**
2006	Jordan Valley Water – Seismic	$1,707,750	$569,250	$2,277,000
	Ogden City Fire - Seismic	$374,254	$124,751	$499,005
	Wasatch Front – Planning	$344,278	$126,981	$471,259
Total 2006		**$2,426,282**	**$820,982**	**$3,247,264**
2007	SL Leonardo Center - Seismic	$1,025,328	$341,776	$1,367,104
	Jordan Valley Water – Seismic	$2,040,000	$680,000	$2,720,000
	Utah DHS - Planning	$187,507	$62,502	$250,009

Total 2007		**$3,252,835**	**$1,084,278**	**$4,337,113**
2008	Utah DHS - Planning	$93,750	$31,250	$125,000
	Weber Basin- Planning	$126,375	$143,039	$269,414
	Emigration Canyon - Fire	$298,778	$103,221	$402,000
	Washington County - Flood	$200,000	$131,550	$331,550
Total 2008		**$718,903**	**$409,060**	**$1,127,964**
2009	Midway Town Hall - Stabilization	$541,219	$244,926	$786,145
	Brigham City Library - Seismic	$650,000	$226,443	$876,443
Total 2009		**$1,191,219**	**$471,369**	**$1,662,588**
2010	Six County – Planning	$95,250	$31,750	$127,000
	Uintah Basin – Planning	$68,250	$22,750	$91,000
	Southeastern – Planning	$75,000	$25,000	$100,000
	Snyderville Basin – Planning	$146,839	$48,946	$195,785
	Weber Basin – Retrofit	$91,650	$30,550	$122,200
	Weber Basin – Seismic	$767,399	$255,799	$1,023,198
	Central Utah Water – Seismic	$1,684,300	$561,500	$2,245,800
Total 2010		**$2,928,688**	**$976,295**	**$3,904,983**
TOTAL		**$17,054,329**	**$17,461,883**	**$34,516,213**

*exceeds 25%

Utah HMGP DR-1576 & DR-1598

Federal Share - $560,950 (70%)
State Share - $234,375 (30%)
Total: $795,325

Year	Disaster	Project/Planning	Federal	Non Federal	Total
2005	**DR-1576**	Weber University Union Center – Seismic	$442,744	$147,581	$590,325
2005	**DR-1598**	Fire Station Unified Fire – Seismic	$118,206	$86,794	$205,000
	Total		**$560,950**	**$234,375**	**$795,325**

PDM and HMGP grants are awarded based on criteria outlined in the HMGP Administrative plan (Appendix B HMGP Admin Plan). The State Criteria in the 2010 HMGP Admin states "a project should also support general hazard objectives. These general objectives are supported by state or local hazard mitigation plans". The first State Criteria is that the project must "Support the goals and objectives of the community's adopted/approved local hazard mitigation plan".

The Division will establish a Mitigation Grant Review Committee to review, evaluate, and prioritize the applications. The Mitigation Grant Review Committee normally will consist of Mitigation and Recovery Section. The members from the State Hazard Mitigation Team (SHMT) may also be asked to participate on the Committee.

Members from the Mitigation and Recovery Section include: State Hazard Mitigation Officer, State Hazard Mitigation Planner, Earthquake Program Manager, State NFIP Coordinator, Flood Map Mod Coordinator, Mitigation and Recovery Manager.

The committee will review and prioritize those grant applications that passed the initial eligibility screening using the Hazard Mitigation Grant Program Evaluation System and make recommendations based on published criteria mentioned earlier in this document.

Ranking for recommendation of funding will include consideration of the following:

1. Combined ordinal application score(s).

2. Available funding.

3. Objectives and criteria in Utah Standard Hazard Mitigation Plan

4. Federal and state criteria as outlined earlier in this document.

5. 44 CFR § 206.435 (b)

6. Geographical mix.

7. Previous mitigation program participation and results

8. Current mitigation program participation. (At its discretion, the Division may limit applicants to three active projects at any one time.)

For HMGP, a prioritized list of the projects will be provided to the Director, as recommended for FEMA approval by the Committee. For PDA, a prioritized list of the projects is entered into FEMA eGrants. The Division will forward state recommended applications to FEMA for funding approval. The Division will formally notify applicants of the results of the ranking and review process and of their recommended, or non-recommended, status.

The state's successful PDM program 2003 – 2010 has supported mitigation goals identified in the current plan.

- The PDM wildfire mitigation grants have contributed to Wildfire Mitigation Strategies, Priority Goal #1; eliminate dangerous fuel loading in wildlands.
- PDM earthquake seismic projects have contributed to Earthquake Mitigation Strategies, Priority Goal #1; reduce the effects of earthquakes on critical facilities.
- The PDM state and local mitigation planning grants have contributed to Priority Goal #1, increase awareness of hazard mitigation, and Priority Goal #2, improve overall integrated statewide mitigation efforts.

Local Mitigation Planning Coordination

Requirement §201.4(c)(3)(ii): [The State mitigation strategy shall include] a general description and analysis of the effectiveness of local mitigation policies, programs, and capabilities.

Local Funding and Technical Assistance

The Department of Public Safety, Division of Homeland Security (DHLS) provides technical and financial assistance, through federal mitigation grants, to locals for mitigation planning through the Mitigation and Recovery Section. The Mitigation and Recovery Section is comprised of the Earthquake Program Manager, State Hazard Mitigation Officer, State Floodplain Administrator, Risk Map Coordinator, and State Mitigation/Financial Planner. This group along with their ties to state and federal technical experts will assist any local jurisdiction with mitigation planning. The Mitigation and Recovery Section can offer assistance with funding, planning process, risk assessment, capability assessment, hazard analysis, GIS, project development, etc.

Local government participated in completing PDM plans through assistance and participation the multi-jurisdictional mitigation plans. Several city and county governments are considering developing their own hazard mitigation plan, which will be more specific to there particular jurisdiction and hazards. It is expected locally specific mitigation planning will continue into the

future. The State can easily meet the request for technical assistance. Funds for planning assistance currently come from three federal sources the Pre-Disaster Mitigation Grant Program, the Emergency Management Performance Grant (EMPG) or the HMGP 7% planning assistance funds. HMGP funds are only available after and event, thus this funding source is currently unavailable in Utah. Currently, the state has no mechanism to fund the development of local mitigation plan. The locals are typically picking up the cost of local plan development through operating budgets for emergency management programs.

As funding becomes available to update local mitigation plans every five years as specified in DMA 2000, the SHMPC will prioritize plan updates based on the following criteria:

- Vulnerability to hazards
- Age of plan
- Development pressure
- Any changes in population, building stock, or hazards

Following plan update prioritization, a committee will be formed for each region. Region boundaries will follow those used in the current multi-jurisdictional mitigation plan, which align with the Association of Government planning districts. Stakeholders will be contacted and assembled to devise a tactic for completing plan updates. Updates and the method by which these updates occur will be determined democratically by the local jurisdiction participating in the planning process. Stakeholders will include at a minimum:

- County emergency managers
- City emergency managers
- City and County Elected Officials
- Utah DHLS Hazard Mitigation Planner/Finance
- Utah DHLS State Hazard Mitigation Officer

At the conclusion of this committee meeting the following will be determined:

- Whether to complete county plans or update multi-jurisdictional plans
- Determine who will complete those mitigation plans
- Set up a timeline
- Address funding

The Utah Division of Homeland Security provides, and will continue to provide, education and outreach to local jurisdictions and the public. Outreach efforts include but are not limited to earthquake, flood, debris management, public and individual assistance, landslides, pre-disaster preparedness, mitigation and recovery. The Division offers and participates in training, teaching courses, community events, and presentations at conferences. Outreach activities are listed on the Utah DPS Division of Homeland Security Mitigation and Outreach tracking. (Appendix L Mitigation Recovery Outreach)

The Division has an all access comprehensive website which contains information on the Earthquake Program, Mitigation Program and the Floodplain Management Program/NFIP along with the State Mitigation Plan, and the seven jurisdictional mitigation plans covering the state. The website includes numerous other mitigation programs offered by the state and the federal government.

The Division works with FEMA and other State agencies in producing handbooks, manuals and pamphlets used for education and outreach. These materials are distributed at various events around the state for use by the non-technical community, local government officials, elected officials, public works personnel, land-use planners and schoolteachers, developers, engineers, contractors as well as the public through our website.

The Division is working with the Governors Office of Planning and other state agencies in updating the Utah Natural Hazard Handbook. The purpose of the Handbook is to increase awareness of the typical causes of hazards, and their relative significance and impacts. Then, familiarity with mitigation measures will assist technical staff and decision-makers in reducing risk in their communities and citizens in purchasing a home.

In conjunction with FEMA the Division developed a floodplain and soil erosion pamphlet after the St. George flood of 2005. The pamphlet explains steps that the City of St. George took pre-flood that reduced the number of lives and property lost during the event and actions St. George and other cities are taking to reduce future losses. It endorses responsible land use and flood insurance.

The Utah Floodplain and Stormwater Management Association with assistance from the Utah DHLS and other agencies produced a "Flooding in Utah" document. It is a "What you should know when living in Utah" about floods guide, explaining types of floods, flooding history, why and how to prepare for floods. The manual also explains what to do during and after a flood along with information about the National Flood Insurance Program.

The Utah DHLS produced a "Quick Guide to Floodplain Management in Utah". This guide explains why and how communities in the Sate of Utah manage floodplains to protect people and property. The guide also explains how to read floodplain maps, floodplains, what it means to be in the floodplain and what you can do if your property is in the floodplain.

The Utah Earthquake Program published "Putting Down Roots in Earthquake Country, Your Handbook for Earthquakes in Utah", in 2009. The document is an earthquake guide, explaining everything from how earthquakes occur to how and why citizens need to prepare for earthquakes.

Prioritizing Local Assistance

Requirement §201.4(c)(4)(iii): [The section on the Coordination of Local Mitigation Planning must include] criteria for prioritizing communities and local jurisdictions that would receive planning and project grants under available funding programs, which should include consideration for communities with the highest risks, repetitive loss properties, and most intense development pressures.

Further, that for non-planning grants, a principal criterion for prioritizing grants shall be the extent to which benefits are maximized according to a cost benefit review of proposed projects and their associated costs.

Requirement §201.4(d): Plan must be reviewed and revised to reflect changes in development, progress in statewide mitigation efforts, and changes in priorities…

When prioritizing mitigation grant applications, at the state level, planning and project grant assistance application will be separated into two categories one applying for planning grants the other for project grants. Grant applications in each category will then be prioritized. This will eliminate planning applications from competing against project applications. The state will assemble a grant applications/project review committee with members from Utah DHLS. The level of funding assistance available and number of grant applications will determine committee size and level of expertise. The committee will utilize the following list of criteria to serve as a measure upon which individual hazard mitigation projects and planning grants will be evaluated, and subsequently prioritized.

- The greatest good for the greatest number within reason.
- Overall risk the community exhibits.
- Intensity of development pressure.
- Identification of persons, agency or organization responsible for implementation.
- Projecting a time frame for implementation.
- Explanation of how the project will be financed including the conditions for financing and implementing as information is available.
- Identifying alternative measures, should financing not be available.
- Be consistent with, support, and help implement the goals and objectives or hazard mitigation plans already in place for surrounding counties.
- Be based on the county seat Vulnerability Analysis.
- Have significant potential to reduce damages to public and/or private property and/or reduce the cost of, state, and federal recovery for future disasters.
- Be the most practical, cost-effective, and environmentally sound alternative after consideration of the options.
- Address a repetitive problem, or one that has the potential to have a major impact on an area, reducing the potential for loss of life, loss of essential services and personal.
- Property, damage to critical facilities, economic loss, and hardship or human suffering.
- Meet applicable permit requirements.
- Not encourage development in hazardous areas.
- Contribute to both the short and long term solutions to the hazard vulnerability risk problem.
- Assuring the benefits of a mitigation measure is equal to or exceeds the cost of implementation.
- Have manageable maintenance and modification costs.
- When possible, be designed to accomplish multiple objectives including improvement of life-safety risk, damage reduction, restoration of essential services, protection or critical facilities, security or economic development, recovery, and environmental enhancement.
- Whenever possible, use existing resources, agencies and programs to implement the project.

Benefit Cost Analysis

Mitigation projects will employ, as one of the primary criteria in prioritizing a project, the extent to which benefits are maximized with respect to cost. Grant applications will utilize one of the FEMA approved Benefit/Cost models to derive a benefit to cost ratio. The use of similar models will allow for consistence in the project review. FEMA has developed models for earthquake,

flood, and wildfire. Models will be checked for accuracy before grant applications are prioritized. FEMA approved benefit/cost models are available from the Utah Division of Homeland Security, Mitigation and Recovery Section.

Integrating Local Mitigation Planning

Requirement §201.4(c)(4)(i): [The section on the Coordination of Local Mitigation Planning must include a] description of the State process to support, through funding and technical assistance, the development of local mitigation plans.

Requirement §201.4(c)(4)(ii): [The section on the Coordination of Local Mitigation Planning must include a] description of the State process and timeframe by which the local plans will be reviewed, coordinated, and linked to the State Mitigation Plan.

Requirement §201.4(d): Plan must be reviewed and revised to reflect changes in development, progress in statewide mitigation efforts, and changes in priorities…

It is the responsibility of the State Hazard Mitigation Officer and the State Hazard Mitigation Planner to implement the coordination of local and state mitigation planning. Coordinating local planning efforts is primarily the responsibility of the State Hazard Mitigation Officer. Coordinating mitigation planning done at the local level includes but is not limited to providing technical expertise, aiding in planning development, and training. As funding becomes available, Utah DHLS will work consistently to maintain mitigation plans, which meet DMA 2000 requirements for each jurisdiction.

The state is in continuous pursuit of updating Local Hazard Mitigation Plans (LHMP). Updates to LHMPs have been staggered to alleviate the pressure of having seven or more LHMP due for update at the same time. Of the seven LHMP, several have been approved by FEMA, one currently in review while the three have just received funding and are beginning the planning update process.

Our process in updating local hazard mitigation plans has been to focus first on the high population/growth areas in the state. The first three planning efforts concentrate on those regions and counties experiencing the most population and the greatest amount of growth as identified in Section One of this plan.

The state will continue to update mitigation plans statewide with funding from PDM. As LHMPs are updated the state will use the mitigation strategies of those plans and include them in the SHMP. The state will reference the LHMP and refer to them for a better understanding of regional hazard analysis and mitigation strategies. The SHMO manages the updates of all LHMPs. The SHMO participates on the planning committees, working with the AOGs and the locals through the whole process collocating with reviewing the updated LHMPs.

The state believes timelines and meeting those timelines are essential in completing a planning process. Utah DHLS believes it is important to maintain defined deadlines and meet those deadlines. At the beginning of any mitigation planning process the SHMPC will meet to define

and establish reverse planning. This is the art of determining what needs to be done and by when; then creating timelines to insure plans are completed prior to a deadline. During this time the committee will determine the amount of time the state will need to review and approve each submitted mitigation plan. Based on past experience we believe it is possible to do a comprehensive review, on up to seven mitigation plans, in 30 days.

The reviews are completed by the SHMPC with assistance from the SHMT, if needed. The State Hazard Mitigation Officer coordinates the review process with SHMPC assigned responsibilities as follows:

- State Floodplain Manager: reviews portions of the plans pertaining to flooding and reviews overall layout and grammar
- Earthquake Program Manager: reviews those pieces of the plan pertaining to seismic and geologic hazards.
- State Hazard Mitigation Officer: concentrates on accuracy of information in the plan and layout.
- State Hazard Mitigation Planner/Finance: reviews plans entire plan ensuring the plan meets the requirements of DMA 2000.

The Mitigation and Recovery Section will implement findings of the local mitigation planning at the first update of the State Mitigation Plan. Updates will occur every three years, after an event, or at the discretion of FEMA or the Division of Homeland Security Director.

The SHMP used loss estimates from LHMP in the Risk Assessment Section. The loss estimates from the LHMP give the SHMPC a better understanding of overall state risk to each identified hazard. Not all of the LHMP have usable loss estimates, the SHMP shows which LHMP loss estimates were available at the time of this planning process.

The SHMPC has suggested more incorporation of the SHMP into LHMP in future planning efforts. Future SHMP will make better use of the LHMP. This will be accomplished through better mitigation implementing tracking

Plan Maintenance Procedure

Requirement §201.4(c)(5)(i): [The Standard State Plan Maintenance Process must include an] established method and schedule for monitoring, evaluating, and updating the plan.

Plan Maintenance

Utah DHLS, Mitigation and Recovery Section is the agency primarily responsible for the plan maintenance but will utilize other entities, as needed or required, for reviews and comments as a part of the maintenance process

Utah's SHMP is a living document and will be reviewed, and potentially updated constantly. The plan will be revised should conditions, under which the plan was developed, change such as new or revised State policies, a major disaster, or the availability of funding.

Evaluation of the 2008 Plan Maintenance and Project Monitoring
During review of the 2008 Plan, Utah DHLS determined ways in which the maintenance plan had not been working for the state and established a goal of improving maintenance for the next SHMP Update (2014). The SHMP Update (2011) has been enhanced since 2008, but mitigation actions have not been implemented in the ways laid out in the 2008 SHMP.

To address this shortcoming the SHMPC will create a Mitigation Working Group. The Mitigation Working Group will consist of members from the SHMPC and selected staff from the Utah DHLS Planning Section. The working group will champion the implementation of the mitigation strategies. This will improve Plan maintenance because the Mitigation Working Group will: 1) already have track records for maintaining a regular meeting schedule, and 2) can focus their efforts on their own topic of expertise and not have to contend with the entire SHMP.

In terms of monitoring the implementation of the SHMP's goals, objectives, actions, and mitigation projects in general, the Utah DHLS Mitigation and Recovery Section tracks and focuses on mitigation projects funded by FEMA's Unified HMA programs (as it is a requirement of the grant agreements that such projects be monitored on a quarterly basis). See the Utah Pre Disaster Mitigation (PDM) Project and Planning Grants 2003 – 2010 table on page 40-43.

It is complicated to track the implementation of mitigation projects completed by other federal, state and local agencies. Tracking all implemented mitigation projects throughout the State will be a prioritized goal of the Mitigation Working Group

It was agreed by the SHMPC that an annual report from the Mitigation Working Group seemed to be the correct frequency, and a commitment was made to improve the monitoring and evaluation processes.

Plan Monitoring
The 2008 SHMP maintenance recommendation was as follows:

1. On an annual basis the SHMT will review the SHMP.
2. The SHMT will evaluate the mitigations strategies, reprioritize, and revise if needed.

The SHMT did not evaluate the mitigation strategies, reprioritize, and revise the SHMP as outlined in the 2008 maintenance. A new strategy to evaluate and maintain the SHMP is outlined below.

The Utah DHLS Mitigation and Recovery Section in conjunction with the Mitigation Working Group will develop an annual mitigation report. This report start being developed in the late fall of each year and the report will be produced by February of the following year. The report will focus on the following:

- Progress on achieving the goals in the current SHMP
- Progress on implementing the actions identified in the current SHMP, including initiation, status and completion of such actions
- Progress on implementing other mitigation actions outside of the SHMP

- Progress on implementing mitigation projects funded through FEMA's Unified HMA Program
- Report from the Mitigation and Recovery Section on the evaluation of the plan
- Report on disasters declared in the past year and an overview of the mitigation strategy for the disaster

The SHMPC meets throughout the year and will monitor activities.

Plan Evaluation
On an annual basis the SHMPC will meet to evaluate the plan in the fall of each year. The SHMPC will evaluate the plan based on the following criteria:

- How much progress has been made on mitigation actions and projects,
- Implementation problems (technical, political, legal, and financial),
- Relevancy of Goals, Objectives, and Actions and whether they need to be discontinued or changed
- Level of involvement by the public and other agencies; and
- Accuracy and precision of the risk assessments, availability of new data, and whether such data needs to be reflected in the plan immediately.

After each major disaster in Utah declared by the President, the Utah Mitigation and Recovery Section will incorporate an action in the Mitigation Strategy for the disaster to evaluate the plan for assessing whether or not the SHMP addresses the reality resulting from the disaster. This evaluation will be documented by the SHMPC.

Mitigation Actions Implemented
Mitigation actions implemented are outlined in the Section 3 of the SHMP Mitigation Activities. Mitigation actions implemented through the Unified HMA program are outline in Section 4, page 40 to 43. The SHMPC can easily track mitigation projects completed through HMA programs, but have not found a reliable method to track mitigation projects completed by other federal and state agencies as well as local jurisdictions.

Plan Update
Every three years as required by 44 CFR 201.4, the State Hazard Mitigation Officer (SHMO) is responsible for submitting the revised SHMP to the FEMA Regional Administrator and for facilitating adoption of the plan by the state. The SHMO uses the FEMA Standard State Hazard Mitigation Plan Review Crosswalk as a tool for updates, and submits the revised Plan with the completed crosswalk to FEMA. Utah DHLS will revise the Plan more frequently if conditions under which the Plan was developed materially change through new or revised State policy, a major disaster, or availability of funding. Future updates of the SHMP will involve the SHMPC and their recommendations.

The method for the plan update is for the recommendations for updates be reviewed and discussed through the SHMPC. Recommended updates will then be provided to the Utah DHLS, Division Director for consideration. Upon acceptance, the Utah Mitigation and Recovery Section will develop the draft updates, circulate draft updates for review to the SHMPC, and upon incorporation of review comments forward the draft plan for final state approval.

Local Plan Coordination/State Hazard Mitigation Plan
As part of the SHMP update, local plans will be assessed, focusing on three areas: risk assessment, mitigation strategy, and local capability. As part of this update the local plan data was analyzed to ensure that the state mitigation goals and objectives are compatible with local actions and to undertake a comparative analysis of the state risk assessment versus local risk assessments. These data will be updated and incorporated into the 2014 SHMP during the next planning cycle.

Monitoring Progress

Requirement §201.4(c)(5)(ii): [The Standard State Plan Maintenance Process must include a] system for monitoring implementation of mitigation measures and project closeouts. Requirement §201.4(c)(5)(iii): [The Standard State Plan Maintenance Process must include a] system for reviewing progress on achieving goals as well as activities and projects in the Mitigation Strategy.

A key capability in managing mitigation programs is to monitor progress of mitigation activities occurring in the state. Completion of not only the state mitigation strategies, but also those strategies featured in local plans will be the ultimate marker by with this mitigation plan and the state natural hazard program will be judged.

The SHMPC will review mitigation projects against the mitigation strategies of this plan and local mitigation plans to ensure projects are in line with the goals and strategies laid out in mitigation plans.

For PDM and HMGP funding, the tracking of projects begins when the SHMO reviews initial project applications for completeness and eligibility. At this time, the SHMO also compares the project with the SHMP Strategies Section to determine whether the project is in agreement with the actions, goals and objectives established in the mitigation strategy. The SHMO maintains records of the applicable action, goal and objective by funding source, year, and hazard.

One deficiency identified in the current monitoring process is to take the necessary action to write up mitigation success stories to be submitted to FEMA and for use in the State. This will be a focus of monitoring in the upcoming three years.

Funded Projects
Mitigation and financial staff of DHLS will be responsible for the monitoring and tracking of all funded mitigation projects. Tracking of these projects will involve quarterly reporting by state sub-grantees due one month following the end of the federal quarter. These quarterly reports are designed by DHLS mitigation staff that meets the format required by FEMA in eGrants system. Quarterly reports will at a minimum include a narrative providing details on progress made, problems, percentage of completion and financial information.

Upon project completion the state will assist sub-grantees in filling out any required closeout documentation. At close out the mitigation staff will complete a project close out site visit, to

insure the project was completed as stated in the grant SOW and within the bounds of all state and federal laws.

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List of Acronyms and Recognized Abbreviations

AGRC	Automated Geographic Reference Center
AOG	Association of Governments
Assoc.	Association
ATV	All Terrain Vehicle
Bldg.	Building
BLM	Bureau of Land Management
BOR	Bureau of Reclamation
Bur.	Bureau
Corp.	Corporation
CRS	Community Rating System
Dept.	Department
Utah HLS	Utah Division of Homeland Security
Div	Division
DMA 2000	Disaster Mitigation Act of 2000
DOT	Department of Transportation
DNR	Division of Natural Resources
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
ESRI	Environmental Systems Research Institute
FEMA	Federal Emergency Management Agency
FFSL	Forestry Fire and State Lands
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FS	Forest Service
GIS	Geographic Information Systems
HAZMAT	Hazardous Materials
HAZUS MH	Hazards United States
ICS	Incident Command System
LEPC	Local Emergency Planning Committee
MSL	Mean Sea Level
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
OSHA	Occupational Safety and Health Administration
PDM	Pre-Disaster Mitigation
PDSI	Palmer Drought Severity Index
SCS	Soil Conservation Service
SLC	Salt Lake City
SPI	Standardized Precipitation Index
SWSI	Surface Water Supply Index
UFFSL	Utah Forestry, Fire, and State Lands
UGS	Utah Geological Survey
URWIN	Urban-Rural Wildland Interface Zone
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
UT	Utah

Glossary of Terms

Abutment (dam) - the valley side against which a dam is constructed.

Acre-foot of water - approximately 326,000 gallons of water, or approximately a football field covered by one foot of water.

Active Fault - a fault displaying evidence of displacement
along one or more of its traces during Holocene time (about the last 11,000 years).

Aftershocks - earthquakes during the seconds, hours, days to months following a larger earthquake (main shock) in the same general region.

Alluvial fan - a cone-shaped deposit of stream sediments, generally deposited at the base of a mountain where a stream encounters flatter terrain.

Amplitude (seismic waves) - the maximum height of a wave crest or depth of a trough. Amount the ground moves as a seismic wave passes, as measured from a seismogram.

Avalanche path - the area in which a snow avalanche runs; generally divided into starting zone, track, and runout zone.

Basin and Range physiographic province - consists of north-south-trending mountain ranges separated by valleys, bounded by the Rocky Mountains and the Colorado Plateau to the east and the Sierra-Cascade Mountains to the west (includes western Utah).

Bearing capacity - the load per unit area, which the ground can safely support without excessive yield.

Bedrock - solid in-place rock, sometimes exposed and sometimes concealed beneath the soil.

Collapsible soil (hydrocompaction) - loose, dry, low-density soil that decreases in volume or collapses when saturated for the first time following deposition.

Critical Areas - Environmentally sensitive areas which include wetlands fish and wildlife habitat conservation areas; geologically hazardous areas; areas with a critical recharging effect on aquifers used for potable water; and frequently flooded areas. Critical areas have measurable characteristics which, when combined, create a value for or potential risk to public health, safety and welfare.

Critical/Essential Facilities - Structures meeting one or more of the following criteria:

- Fire stations, police stations, storage facilities for vehicles/equipment needed after a hazard event, and emergency operation centers.
- Hospitals, nursing homes, and housing which is likely to contain occupants who may not be sufficiently mobile to avoid injury or death as a result of a hazardous event.
- Public and private utility facilities, which are vital to maintaining or restoring normal services to, damaged areas after a hazardous event.
- Structures or facilities that produce, store, or use highly flammable, explosive, volatile, toxic and/or water reactive materials.

Debris flow - involves the relatively rapid, viscous flow of surficial material that is predominantly coarse grained.

Debris slide - involves predominantly coarse-grained material moving mainly along a planar surface.

Delta - a deposit of sediment formed at the mouth of a river where it enters an ocean or lake.

Earth flow - involves fine-grained material that slumps away from the top or upper part of a slope, leaving a scarp, and flows down to form a bulging toe.

Earthquake - a sudden motion or trembling in the earth as fracture and movement of rocks along a fault release stored elastic energy.

Earthquake Fault Zone - earthquake fault zones are regulatory zones around active faults. The zones are used to prohibit the location of critical facilities and structures designed for human occupancy from being built astride an active fault. Earthquake Fault Zones are plotted on topographic maps at a scale of 1-inch equals 2,000 feet. The zones vary in width, but average about one-quarter mile wide.

Earthquake induced Seiches - earthquake generated water waves causing inundation around shores or lakes and reservoirs.

Epicenter - the point on the earth's surface directly above the focus of an earthquake.

Erosion - the removal of earth or rock material by many types of processes, for example, water, wind, or ice action.

Expansive soil and rock - soil and rock which contain clay minerals that expand and contract with changes in moisture content.

Fault - break in the earth along which movement occurs.

Fault segment - section of a fault that behaves independently from adjacent sections.

Fault zone - an area containing numerous faults.

FEMA - The Federal Emergency Management Agency was authorized under Section 404 of the Stanford Act. Provides funding for hazard mitigation projects that are cost-effective and complies with existing post-disaster mitigation programs and activities. These projects cannot be funded through other programs may be eligible.

Fill - material used to raise the surface of the land generally in a low area.

Fire-resistant vegetation - plants that do not readily ignite and burn when subjected to fire because of inherent physiological characteristics of the species such as moisture content, fuel loading, and fuel arrangement.

Flood plain - an area adjoining a body of water or natural stream that has been or may be covered by flood water.

Flood way - an area of land immediately adjacent to a stream or river channel that, in times of flooding, becomes an enlarged stream or river channel and carries the floodwater with the highest velocity.

Floodplain - an area adjoining a body of water or natural stream that has been or may be covered by floodwater.

Floodplain (100 year) - floodplains that have the potential to flood once every 100 years or that has a one percent chance of flooding equal to or in excess of that in any given year.

Fluvial - concerning or pertaining to rivers or streams.

Focus - the point of origin of an earthquake within the earth, and the origin of the earthquake's seismic waves.

Formation (geologic) - a mappable rock unit consisting of distinctive features/rock types separate from units above and below.
Frequency (seismic waves) - the number of complete cycles of a seismic wave passing a point during one second.

Fuel (fire) - vegetation, building material, debris, and other substances that will support combustion.

Fuel break - a change in fuel continuity, type of fuel, or degree of flammability of fuel in a strategically located strip of land to reduce or hinder the rate of fire spread.

Fuel type - a category of vegetation used to indicate the predominate cover of an area.

Glacial moraine - debris (sand to boulders) transported and deposited by glacial ice along a glacier's sides or terminus.

Graben - a block of earth down dropped between two faults.

Gradient (slope) - a measure of the slope of the land surface.

Ground failure - a general term referring to any type of ground cracking or subsidence, including landslides and liquefaction-induced cracks.

Ground shaking - the shaking or vibration of the ground during an earthquake.

Ground water - that portion of subsurface water which is in the zone of saturation.

Gypsiferous deposits - soil or rock containing gypsum, which can be subject to dissolution.

Gypsum - a mineral composed of hydrated calcium sulfate. A common mineral of evaporites.

Hazard Mitigation Plan - the plan resulting from a systematic evaluation of the nature and extent of vulnerabilities posed by a hazard present in society that includes the strategies needed to minimize future vulnerability to hazards.

Hazard Mitigation - any action taken to reduce or permanently eliminate the long-term risk to human life and property and the environment posed by a hazard.

HAZUS - Hazard United States. Earthquake Loss estimation software using GIS databases developed by FEMA.

Head (landslide) - the upper parts of the slide, material along the contact between the disturbed material and the main scarp.

Holocene - geologic epoch covering the last 10,000 years (after the last Ice Age).

Igneous rocks - rocks formed by cooling and hardening of hot liquid material (magma), including rocks cooled within the earth (for example, granite) and those that cooled at the ground surface as lavas (such as basalt).

Impermeable - materials having a texture that does not permit water to move through.

Intermountain seismic belt - zone of pronounced seismicity, up to 120 miles wide and 800 miles long, extending from Arizona through central Utah to northwestern Montana.

Lacustrine - concerning or pertaining to lakes.

Lake Bonneville - a large, ancient lake that existed 30,000 to 12,000 years ago and covered nearly 20,000 square miles in Utah, Idaho, and Nevada. The lake covered many of Utah's valleys, and was almost 1,000 feet deep in the area of the present Great Salt Lake.

Lake Bonneville sediments - sediments deposited by Lake Bonneville, found in the valleys, which range from gravels and sands to clays.

Landslide - a general term for a mass of earth or rock, which moves down slope by flowing, spreading, sliding, toppling, or falling (see slope failure).

Lateral spread - lateral down slope displacement of soil layers, generally several feet or more, above a liquefied layer.

Levee (flood) - a berm or dike used to contain or direct water, usually without an outlet or spillway.

Liquefaction - sudden large decrease in shear strength of a cohesionless soil (generally sand or silt) caused by collapse of soil structure and temporary increase in pore-water pressure during earthquake ground shaking.

Magnitude (earthquake) - a quantity characteristic of the amplitude of the ground motion of an earthquake. The most commonly used measurement is the Richter magnitude scale; a logarithmic scale based on the motion that would be measured by a standard type of seismograph 60 miles from the earthquake's epicenter.

Metamorphic rocks - rocks formed by high temperatures and/or pressures (for example, quartzite formed from sandstone).

Middle Rocky Mountains physiographic province - consists of mountainous terrain of high relief, extending from northern Utah to Wyoming, Idaho, and Montana (includes the Wasatch Range and Uinta Mountains in Utah).

Modified Mercalli intensity (MMI) - the most commonly used intensity scale in the U.S.; it is a measure of the severity of earthquake shaking at a particular site as determined from its effect on the earth's surface, man, and man's structures.

Montmorillonite - a clay mineral characterized by expansion upon wetting and shrinking upon drying.

Natural vegetation - native plant life existing on a piece of land before any form of development.

Normal fault - fault caused by crustal extension in which relative movement on opposite sides is primarily vertical; for example, the Wasatch fault.

Oolite - spherical grains of carbonate sand with a brine shrimp fecal pellet nucleus.
Outlet (dam) - a conduit through which controlled releases can be made from the reservoir.

Peat - unconsolidated surficial deposit of partially decomposed plant remains.

Period (geologic) - a standard (world-wide) geologic time unit.

Permeability - the capacity of a porous rock or soil for transmitting a fluid.

Physiographic province - a region whose pattern of relief features or landforms differs significantly from that of adjacent regions.

Piping (problem soil and rock) - a weak incoherent layer in unconsolidated deposits that acts as a channel directing the movement of water. As the layer becomes saturated it conducts water to a free face (cliff or stream bank for example) that intersects the layer, and material exits out a "pipe" formed in the free face. Piping can occur in a dam as the result of progressive development of internal erosion by seepage.

Pore space - the open spaces in a rock or soil between solid grains. The spaces may be filled with gas (usually air) or liquid (usually water).

Porosity - the ratio of the volume of pore space in rock or soil to the volume of its mass, expressed as percentage.

Probable Maximum Flood (PMF) - a flood that would result from the most severe combination of critical meteorological and hydrologic conditions possible in a region.

Probable Maximum Precipitation (PMP) - the maximum amount and duration of precipitation that can be expected to occur on a drainage basin.
Problem soil and rock - geologic materials that are susceptible to volumetric changes, collapse, subsidence, or other engineering geologic problems.

Project Impact - An initiative of the Federal Emergency Management Agency intended to modify the way in which the United States handles natural disasters. The Goal of Project Impact from a Federal Government perspective is to reduce the personal and economic costs of hazard events by bringing together the private and public sector to better enable the citizens of a community to protect themselves from natural hazards.

Quaternary - a geologic time period covering the last 1.6 million years.

Recurrence interval - the length of time between occurrences of a particular event (an earthquake, for example).

Rock fall- abrupt free fall or down slope movement, such as rolling or sliding, of loosened blocks or boulders from an area of bedrock. The rock-fall runout zone is the area below a rock-fall source which is at risk from falling rocks.

Rock topple - forward rotation movement of a rock unit(s) about some pivot point.

Runout zone (avalanche) - where a snow avalanche slows down and comes to rest (deposition zone). For large avalanches, the runout zone can include a powder- or wind-blast zone that extends far beyond the area of snow deposition.

Sand boil (earthquake) - deposit of sandy sediment ejected as water and sand to the surface, formed when ground shaking has caused liquefaction at depth.

Scarp - a relatively steeper slope separating two more gentle slopes. Scarps can form as result of earthquake faulting.

Sediment - material that is in suspension, is being transported, or has been moved from its site of origin by water, ice, or wind, and has come to rest on the earth's surface either above or below the sea level.

Sedimentary rocks - rocks formed from loose sediment such as sand, mud, or gravel deposited by water, ice, or wind, and then hardened into rock (for example, sandstone); or formed by dissolved minerals precipitating out of solution to form rock (for example, tufa).

Seiche - a standing wave generated in a closed body of water such as a lake or reservoir. Ground shaking, tectonic tilting, sub aqueous fault rupture, or landsliding into water can all generate a seiche.

Seismic waves - vibrations in the earth produced during earthquakes.

Seismicity - seismic or earthquake activity.

Sensitive clay - clay soil that experiences a particularly large loss of strength when disturbed. Deposits of sensitive clay are subject to failure during earthquake ground shaking.

Shear strength - the internal resistance that tends to prevent adjacent parts of a solid from "shearing" or sliding past one another parallel to the plane of contact. It is measured by the maximum shear stress that can be sustained without failure.

Shear stress - a stress causing adjacent parts of a solid to slide past one another parallel to the plane of contact.

Slope failure - a general term referring to any type of natural ground movement on a sloping surface (see landslide).

Slump - a slope failure that slides along a concave rupture surface. Generally slumps do not move very far from the source area.

Snow avalanche - a rapid down slope movement of a mass of snow, ice, and debris.

Stafford Act - Robert T. Stafford Disaster Relief and emergency Assistance Act, PL 100-707, signed into law November 23 1988: amended the Disaster Relief Act of 1974, PL 93-288

Starting zone (avalanche) - where the unstable snow or ice breaks loose and starts to slide.

Subsidence - a settling or sinking of the earth's crust.

Surface fault rupture (surface faulting) - propagation of an earthquake-generated fault rupture to the ground surface, displacing the surface and forming a scarp.

Tectonic subsidence - subsidence (down dropping) and tilting of a basin on the down dropped side of a fault during an earthquake.

Toe (landslide) - the margin of disturbed material most distant from the main scarp.

Track (avalanche) - the slope or channel down which a snow avalanche moves at a fairly uniform speed.

Unconsolidated basin fill – un-cemented and non-indurated sediment, chiefly clay, silt, sand, and gravel, deposited in basins.

Urban area - a geographical area, usually of incorporated land, covered predominately by engineered structures including homes, schools, commercial buildings, service facilities, and recreational facilities.

Urban/Wildland Interface (URWIN) - a geographical area where two different environments, wildland and urban residential meet and interact.

Velocity (ground motion) - the rate of displacement of an earth particle caused by passage of a seismic wave.

Wasatch fault - a normal fault that extends over 200 miles from Malad City, Idaho to Fayette, Utah, and trends along the western front of the Wasatch Range.

Watershed - the area of land above a reference point on a stream or river, which contributes runoff to that stream.

Weathering - a group of processes (such as the chemical action of air, rain water, plants, and bacteria and the mechanical action of temperature changes) whereby rocks on exposure to the weather change in character, decay, and finally crumble into soil.

Wildfire - uncontrolled fire burning in vegetation.

Wildland area - a geographical area of unincorporated land covered predominately by natural vegetation.

Wildland Urban Interface - Wildland vegetation and forested areas adjacent to or intermingled with residential developments.

Zone of deformation (earthquake) - the width of the area of surface faulting over which earth materials have been disturbed by fault rupture, tilting, or subsidence.